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QUARTERLY

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CHANGE FOR THE BETTER

IN FINISHING my July Editorial, I remarked that, in its first 60 years of life, the Meccano Magazine has been through many changes. I also said that there would no doubt be more to come in the future, and how right I was, for a mammoth step forward is imminent. The magazine is changing hands!

Hold it! There is no need for panic. Unlike some past publishing changes, this one is definitely for the better – both for the magazine and especially for you, the Meccano-involved reader.

Many readers will know that Meccano Ltd. took over publication of the M.M. in 1973 to save it from extinction after the previous "outside" publishers decided they could no longer handle it. One of the main reasons why Meccano felt able to do so was because I, a professional journalist, was already employed by the Company and, with the very able assistance of Mike Peddie, was judged capable of producing the magazine, albeit in altered form. It will be appreciated however that, as both Mike and I *already* had full-time jobs, namely handling the Press and Public Relations side of the Company's operation as well as providing technical, product and general information to our customers, the magazine was an *additional* job. While we have both thoroughly enjoyed it, it has involved a tremendous amount of extra work,

To be honest, the work involved in producing the MMQ, combined with our other full-time jobs, has meant that, for the past three or so years, we have not really been able to do our best with any of our duties. We hope we have performed our tasks adequately, but we have not been able to do all on the Company's P.R. front that might have been possible, and we certainly have not been able to produce the magazine to the standard that we wished.

ALTERNATIVE

Circumstances being what they were, however, there was no alternative but to struggle on, aware of – and regretting – the magazine's limitations, yet without the time or facilities to improve things. But now there *is* an alternative! In the past couple of years, we have seen and admired the growth of the independently-published "Meccano Engineer" from what was originally a Club newsletter, through a period as the "Junior Meccano Engineer" and into its present form as a large-format, extremely well-produced magazine of great interest to all Meccano enthusiasts. Indeed, I would be the first to say that, in many ways, the ME is distinctly superior to the MMQ and I do not hesitate to compliment the ME's editorial staff – Mike Nicholls and Paul Smith – on an excellent publication.

Which brings me to the crux of the matter. We at Binns Road believe that Mike, with his colleagues at Delta Graphics (formerly M.W. Publications), can make a better job of the Meccano Magazine than can we, under our circumstances. For what we genuinely believe to be the good of the magazine, therefore, we have agreed to transfer its publication to Delta Graphics and this is in fact my last issue as Editor. I will continue to be closely associated with the MM as Editorial Consultant for Meccano Ltd., but, from January, my good friend Mike Nicholls will occupy the Editorial chair.

In "Meccano Miscellany" inside this issue, Mike outlines some of his plans for the magazine and I know they are good. I wish him every success; he has my full support and I am sure that he may count on your support also. Remember, the Meccano Magazine remains the official organ of the Meccano hobby, with every recognition as such from Binns Road. All existing subscribers will continue to receive the new MM as long as their subscriptions last; the only difference is that they will receive a bigger, better, brighter, more interesting *Meccano* magazine than at present.

And last of all – literally – it only remains for me to thank most sincerely all readers and contributors for the excellent support I have been given during my time in the Editorial chair. This has been deeply and genuinely appreciated and I must say it is with a certain amount of personal sadness that I sign off for the last time. Good-bye.

Chris Jelley

EDITORIAL DIRECTOR: J.D. McHard

EDITOR: C. J. Jelley

ASSISTANT EDITOR: M. K. Peddie

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MECCANO MISCELLANY

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Since the launch of the MMQ in 1973 MIKE NICHOLLS has regularly contributed a 'MECCANO MISCELLANY' feature. From January, Mike takes over as Editor of the new M.M. and here he introduces his team, reviews his past and takes a . . .

Meet the new team! Left to right: Mike Nicholls, Liz Phelan and Paul Smith.

LOOK AT THE FUTURE

IN VIEW of the events disclosed in the editorial of this edition, I thought it wise to devote this *Miscellany* to introducing ourselves, and outlining our plans for the future of *Meccano Magazine.*

Many of you, especially those who have read *Meccano Engineer,* will already know both Paul Smith and myself, but for the benefit of those who do not, may I pen a few words of introduction.

ORIGINS

I am 32 years old, which makes me the third youngest *MM* Editor! I worked in the film industry for a period of 13 years, during which time I gained experience in most departments of film making. In 1971, whilst on my way to a film location, I saw the Meccano shop in Henley-on-Thames, and decided to call in and learn more about the hobby with which I had always been fascinated, but which I had never tried. I could not have forseen the difference that Meccano was to make to my modelling life.

My first *MM* article appeared in December 1972, and two months later, I left the film industry to become a self-employed publisher specializing in literature for the Meccano hobby. I compiled and published the *Meccano Parts Handbook* and *Checklist,* and reissued facsimile editions of old Meccano publications. In September 1973, I met Paul Smith, who has helped me with the production of Meccano literature since that time.

Paul is 16 years old, and is at present attending college. When he first arrived, I had just published the first issue of the *Junior Meccano Engineer* magazine, and he showed an interest in helping with the production of the future quarterly issues. He subsequently joined the editorial staff of the magazine, an experience upon which he will no doubt be drawing in his capacity of Assistant Editor of the new *MM.* Paul will also be taking on the duties of *'Spanner'* in future issues.

During this last year, Paul and I have been joined by Elizabeth Phelan who, after having worked in education, spent a short time in the retail side of the Meccano hobby, prior to joining Meccano Engineer Productions. Although not a Meccano 'nut', Liz has a great respect and understanding for the hobby, together with the organizational flair which is so important in her post as production director of the new *MM.* It will be Liz who will ensure that the machinery of the *MM* is kept well oiled, and that everything in the production of the magazine happens at the right time.

I might add at this point that, although we have worked on projects in co-operation with nearby MW Models, we are an entirely separate operation from that well-known Meccano shop, and any fears that the *MM* is passing into 'commercial' hands are quite groundless.

PEACEFUL CO-EXISTENCE

The first *JME* was a very simple 4-page affair, but it soon expanded, as did the readership, until with issue No.5, one year later, it had reached 24 pages. It became obvious that we could no longer print the magazine ourselves, so No.6 was printed and bound by Willmot Printers Ltd. in High Wycombe, who will be handling the new *MM.* Suddenly we had a real magazine on our hands, and it was at this time that we decided to increase the scope of the publication and re-name it *Meccano*

Engineer, under which name it flourished for six issues, with all production processes up to the printing stage under our direct control.

At no time was the *ME/JME* intended to compete with *Meccano Magazine Quarterly;* we have always seen it as a complementary publication which covered somewhat different aspects of the hobby, and in this way, the two magazines have existed happily side-by-side for three years, with a very strong co-operation, not to say friendship between the two.

A NEW ERA

In 1972, when Model and Allied Publications decided that they could no longer produce *Meccano Magazine,* Meccano Ltd were faced with the choice of letting the magazine die or producing it themselves. It was unthinkable that the *MM* – an international institution – should be allowed to die, so the Company took the only alternative, and all Meccano enthusiasts will, I am sure, join me in thanking Meccano Ltd for keeping our magazine alive these past four years. However, producing a magazine is a complex business, and one for which Meccano Ltd is not equipped, so, now that *Meccano Engineer* has established itself as a go-ahead Meccano journal, a second alternative has presented itself.

Early this year, we received a telephone call from Doug McHard of Meccano Ltd, asking us to consider the amalgamation of MMQ and ME, the new publication to be called *Meccano Magazine.* The idea seemed highly logical, and I could see that the result of the merger would be greater than the sum of the two parts. Suddenly the *MM* was on the way up again, and even if the *ME* is to cease in its own right, there is no cause for sadness, as it has served as a rocket to launch a new era of *Meccano Magazine,* and therefore it could be said to have gone in a blaze of glory!

So much for the past, now what of the future?

APPEARANCE

Taking on the job of producing the *MM* holds a great responsibility, and no-one realizes this more than the new production team. It is not possible for us to forget the past glories of the *MM* and we can assure readers that the magazine has not gone into the hands of 'whiz kids' who intend to turn it into the dislocated comic that some hobby journals become. Our aim is to make the new *MM* up-to-date without being 'flashy'.

The most important task of the magazine is the dissemination of information, and to do this successfully, it will have to be interesting and visually appealing. It will not be just another *Meccano Magazine Quarterly* or *Meccano Engineer,* but the valuable ingredients of both will be retained in a stimulating new magazine with which *MMQ* and *ME* readers alike will feel at home.

THE VITAL LINKS

It is essential for close contact to exist between Meccano Ltd. and the producers of the *MM* to ensure that the magazine continues to be the official journal of the hobby, and the vital link between the enthusiast and the Company. We can assure readers that such contact exists, and our retiring editor, Chris Jelley, will be editorial consultant for Meccano Ltd., so no anxiety need be felt in this respect.

In the past when Meccano Ltd. transferred the *MM* to outside publishers, close contact was lost, because those publishers were not closely concerned with the Meccano hobby. We *are* closely concerned, and we wish to state that we will ensure that the *MM* continues to be primarily a *Meccano* magazine.

Whilst retaining the close contact with, and allegiance to Meccano Ltd., we will continue the *Meccano Engineer's* tradition of free speech. If someone has a criticism to make of Meccano or the magazine, they will be encouraged to express themselves in the pages of *MM.*

The magazine is also the vital link between enthusiasts themselves, and it is hoped that readers will take full advantage of the unique opportunities for communication that it offers.

CONTENT

It is envisaged that some articles not specifically about Meccano, but of immediate interest to the Meccano enthusiast will be included, and among these will be articles of prototype interest. Historical features will be included, balanced by up-to-the-minute news items, suggestions and ideas. Two *MMQ* features to be continued are Dinky Toy News and the Meccano Club reports. *Among the Model Builders* will also continue to provide hints on models and mechanisms, whilst *Round-Up* (previously in *ME)* will concentrate on new products, recent books and other news items. From time to time the *Meccano News* feature will appear, bringing first hand reports of developments in the Meccano system.

Models have always played an important part in the *MM,* and they will continue to do so. There will be models to look at and models to build, and the model instruction department is one in which expansion is planned. We will feature models of all sizes, and that includes "Supermodels'; what is more, we hope to supply complementary prototype information wherever possible.

January's *MM* has a specification of 40 pages in an A4 (210 x 297mm) format. Initially the magazine will be published on a quarterly basis **but a change to monthly publication will take place as soon as possible.** At that time, the popular Modelplans series will be incorporated within the *MM,* with the largest models divided into two or three monthly episodes.

ESSENTIAL EXPANSION

The ultimate aim is to get the *MM* back on the bookstalls and to recruit non-Meccano readers; even if this does not convert them to the hobby, at least it will allow them to support it by purchasing the magazine!

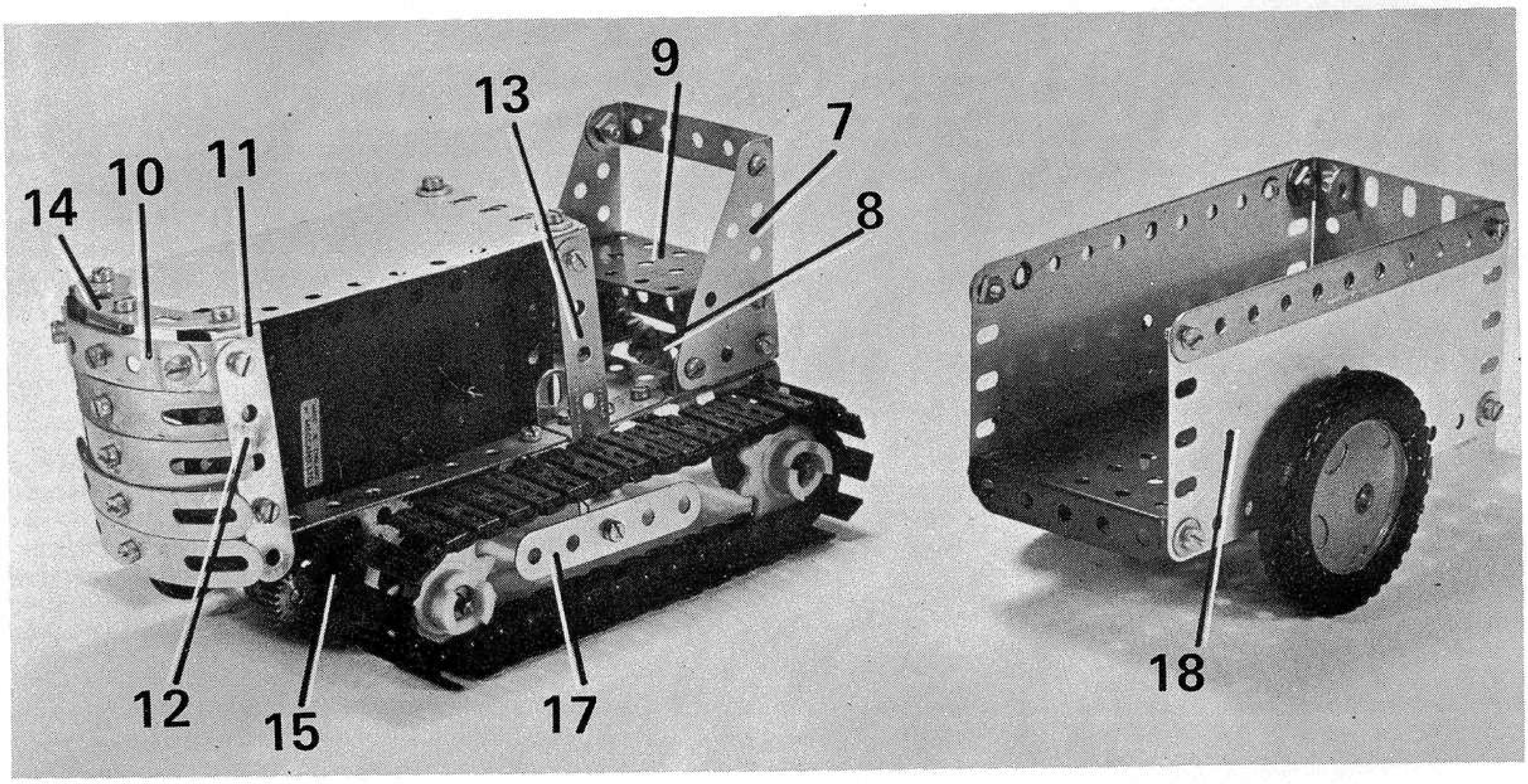
In short, a steady, planned expansion is on the cards. We are determined that the *Meccano Magazine* shall live and flourish, and if it is to do so, it must expand its readership. We feel sure that Meccano enthusiasts understand this and will support us in our campaign to reinstate the MM to its former place as an important international journal.

But to do this we need YOUR help. We need articles (and smaller items) for publication, but most of all we need you to continue to support your magazine by continuing your subscription.

EXCITING FUTURE

An exciting time is ahead for *Meccano Magazine,* and we look forward to a happy and close relationship with our readers. You can contact Mike, Paul, and Liz at the new Editorial Office:

MECCANO MAGAZINE, 167 Reading Road, Henley-on-Thames, Oxfordshire, RG9 1DP, England.



TRACTOR & TRAILER

`Spanner´ describes a neat working model built from a No.5 Set plus the Track Pack

THERE IS little doubt that our "custom-made" crawler track system has, despite its limitations, extended the modelling possibilities of Meccano – certainly within the smaller and intermediate range. Introduced in 1971, the Track Pack has now been on the market for some 5 years, yet I suppose that we on the MMQ have tended to neglect it. We have certainly not featured many tracked models in the Magazine. In this issue, however, we rectify the situation with no less than two models using the Track Pack: an Excavator on page and this simple, but pleasing Tractor and Trailer. Unlike the Excavator, which is not built from any particular outfit, this model is produced primarily from the standard No. 5 Set with the addition of the Track Pack, four Couplings to serve as the driving shaft adaptors, a No. 1 Clockwork Motor and a couple of gears to transmit the drive from the Motor to the tracks.

Dealing first with the Tractor, this is built up from two 5½" Strips 1, each extended three holes rearwards by a 2½" x ½" Double Angle Strip 2, the securing Bolts also fixing a 2½" x 1½" Flexible Plate 3 between the Double Angle Strips at each side. The rear lugs of the Double Angle Strips at each side are connected by a 2½" Strip, while another 2½" x ½" Double Angle Strip 4 connects the forward ends of Strips 1.

Now bolted between the forward lugs of Double Angle Strips 2 are two 2½" Strips 5, one on top of the other for added strength, the securing Bolts also fixing two Angle Brackets in place by their elongated holes. Very tightly secured to the other lugs of these Angle Brackets by ¾" Bolts is the No. 1 Clockwork Motor, each Bolt passing through the second hole up in the sideplate of the Motor and being fitted with three spacing Washers between the Angle Brackets and the sideplate. Full use must be made of the elongated holes in the Angle Brackets to ensure that the Motor fits snugly in place, and it is important to stress that the entire fixture of this section be as tight as possible as this, in fact, provides the only anchoring point for the Motor.

Bolted to the underside of each Double Angle Strip 2 is a Trunnion 6, the securing Bolts also fixing two Angle Brackets above the Double Angle Strip. Fixed to these Angle Brackets is a 2½" x 1½" Triangular Flexible Plate 7, the rear securing Bolt also fixing a 2½" x ½" Double Angle Strip 8 between the Plates at each side of the model. Another 2½" x ½" Double Angle Strip is bolted between the upper corners of the Plates, while a 2½" x 1½" Flanged Plate 9 is also bolted between the Plates, as shown, to serve as the seat. At the other end of the model, the radiator is provided by four Formed Slotted Strips and a curved 2½" Strip 10 bolted to a vertical 2½" Strip, the Bolt fixing Strip 10 also holding an Angle Bracket in place.

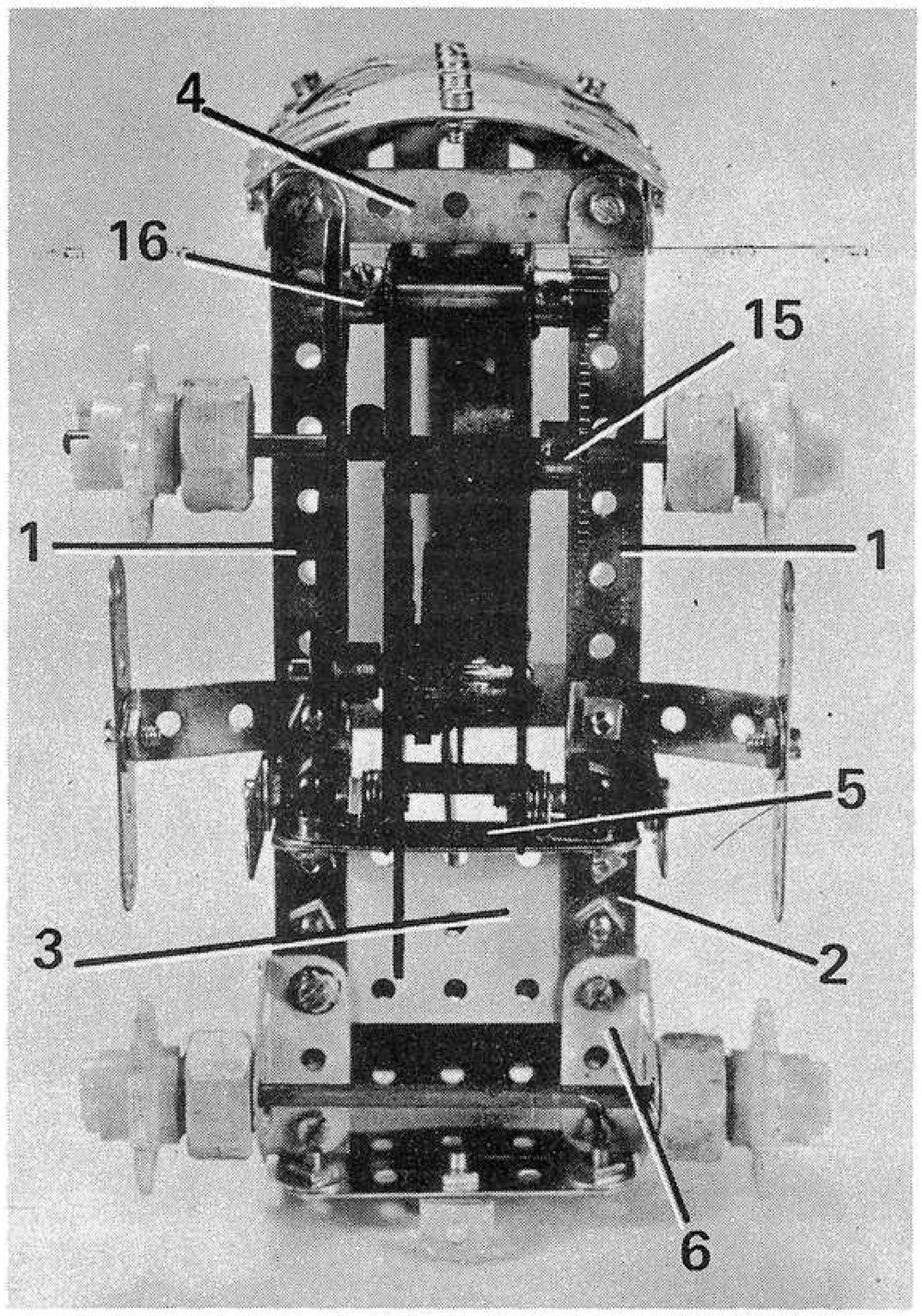
Each end of Strip 10 is extended by an Obtuse Angle Bracket which is

bolted, along with an ordinary Angle Bracket 11, to a 2½" Strip 12 which is also fixed through its second hole to the lug of Double Angle Strip 4. A 3½" Strip 13 is bolted to one lug of a ½" Reversed Angle Bracket which is itself bolted to Strip 1 through its third hole from the rear end. The upper ends of Strips 13 at each side are connected by a 2½" x ½" Double Angle Strip, then bolted to this Double Angle Strip and to Angle Brackets 11 is a 4½" x 2½" Flexible Plate, the forward securing Bolts also fixing a 2½" Stepped Curved Strip 14 in place. The centre of this Stepped Curved Strip is also secured to the Angle Bracket fixed to Strip 10 of the radiator.

DRIVE

Turning to the drive system, a 5" Rod is journalled in the third holes in the lower edges of the sideplates of Clockwork Motor, being held in place by a Spring Clip at one side and by a 57-teeth Gear 15 at the other. This Gear meshes with a ½" Pinion on a 2" Rod journalled in the lower front corner holes of the Motor sideplates and held in place by a 1" Pulley 16. This Pulley is connected by a 6" Driving Band to a ½" Pulley on the Motor output shaft and note that the Band is crossed over to achieve the correct direction of drive. Couplings are fixed on the outer ends of the 5" Rod to provide anchoring points for the 10-teeth Plastic Sprockets in the Track Pack, the other Plastic Sprockets being similarly secured to Couplings on another 5" Rod journalled in the apex holes of Trunnions 6. Each track itself, consists of 34 Track Links. The finishing touch at each side is provided by a 2½" Strip 17 which is bolted to one lug of a 5½" x ½" Double Angle Stirp, secured to the fourth hole from the rear of 5½" Strip 1. Note that this Double Angle Strip is bent downwards slightly, as necessary, to bring Strip 17 into line with the track drive Sprockets. Finally, a towing bracket for the Trailer is provided by a Double Bracket bolted to the centre of the 2½" Strip joining the rear lugs of Double Angle Strips 2.

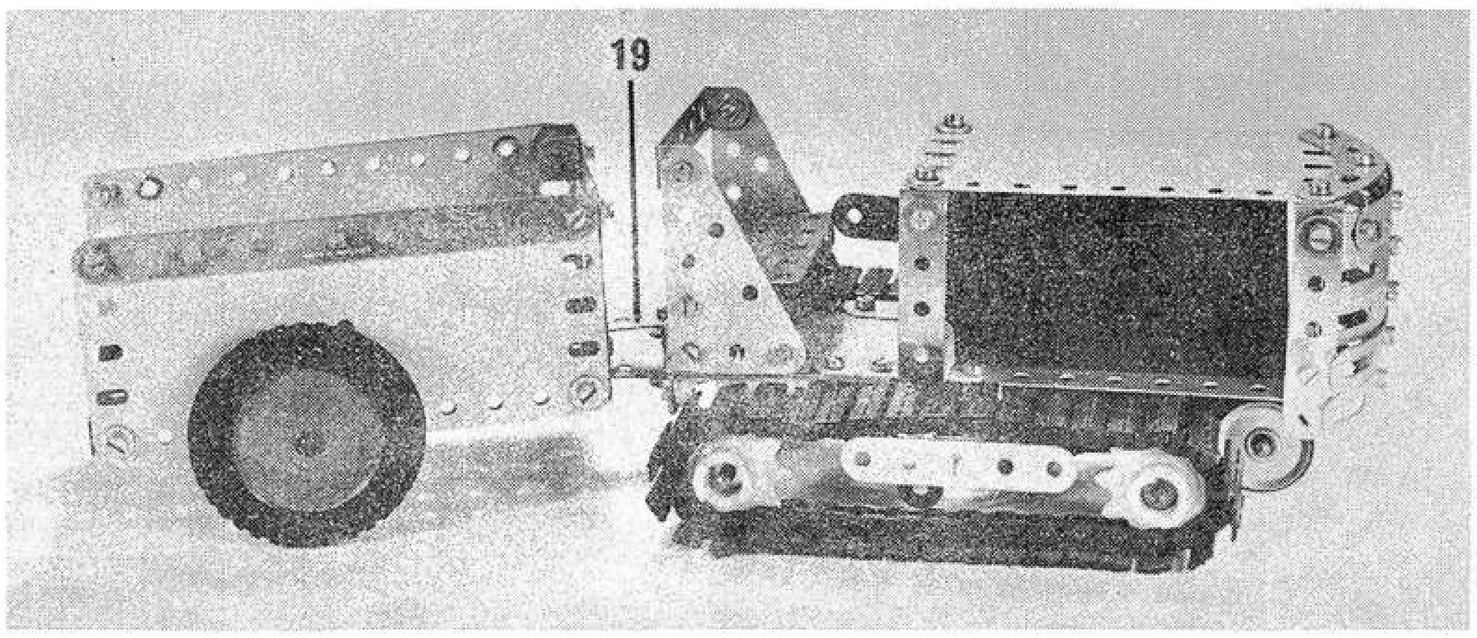
Right, an underside view of the Tractor described in this article. The completed Tractor and Trailer are pictured at the top of the opposite page, from which view it can be seen that, although comparatively simple in design, they are decidedly neat in proportion.



TRAILER

Extremely simple in design is the Trailer, this being built up from a 5½" x 2½" Flanged Plate, to each side flange of which is bolted a 5½" x 2½" Flexible Plate 18 edged along the top by a 5½" Strip. Secured to the forward end flange of the Flanged Plate is a 2½" x 2½" Flexible Plate, the central securing Bolt also fixing a 1½" x ½" Double Bracket 19 in position. The upper corners of the Flexible Plate are attached to the sides of the Trailer, by an Angle Bracket in one case and by a Double Bracket in the other case. A ¾" Bolt is held by a Nut in the end hole of the upper lug of Double Bracket 19, this Bolt locating in the hole in the upper lug of the towing bracket at the back of the Tractor when the Trailer is being coupled to the Tractor. Wheels for the Trailer are provided by 2½" Road Wheels fixed on a 3½" Rod journalled in the side flanges of the Flanged Plate, five holes from the rear.

A general view of the completed Tractor and Trailer, coupled together.



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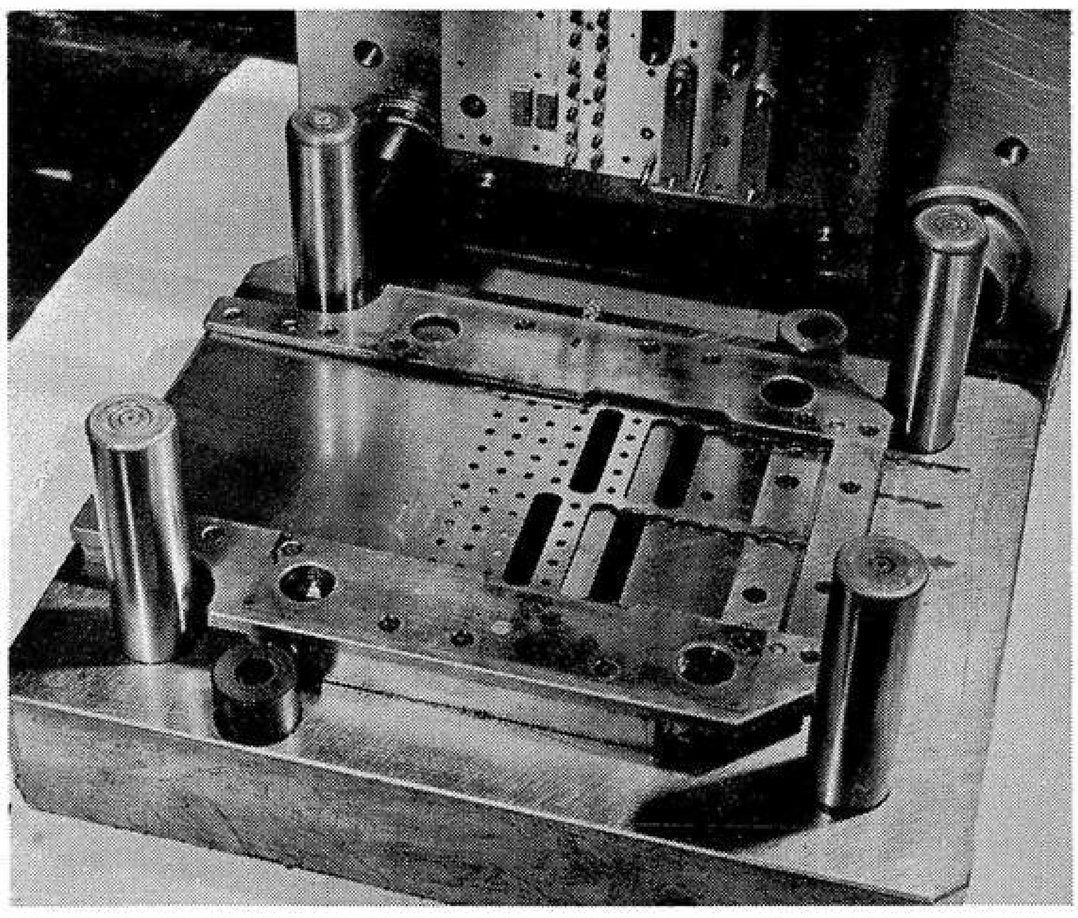
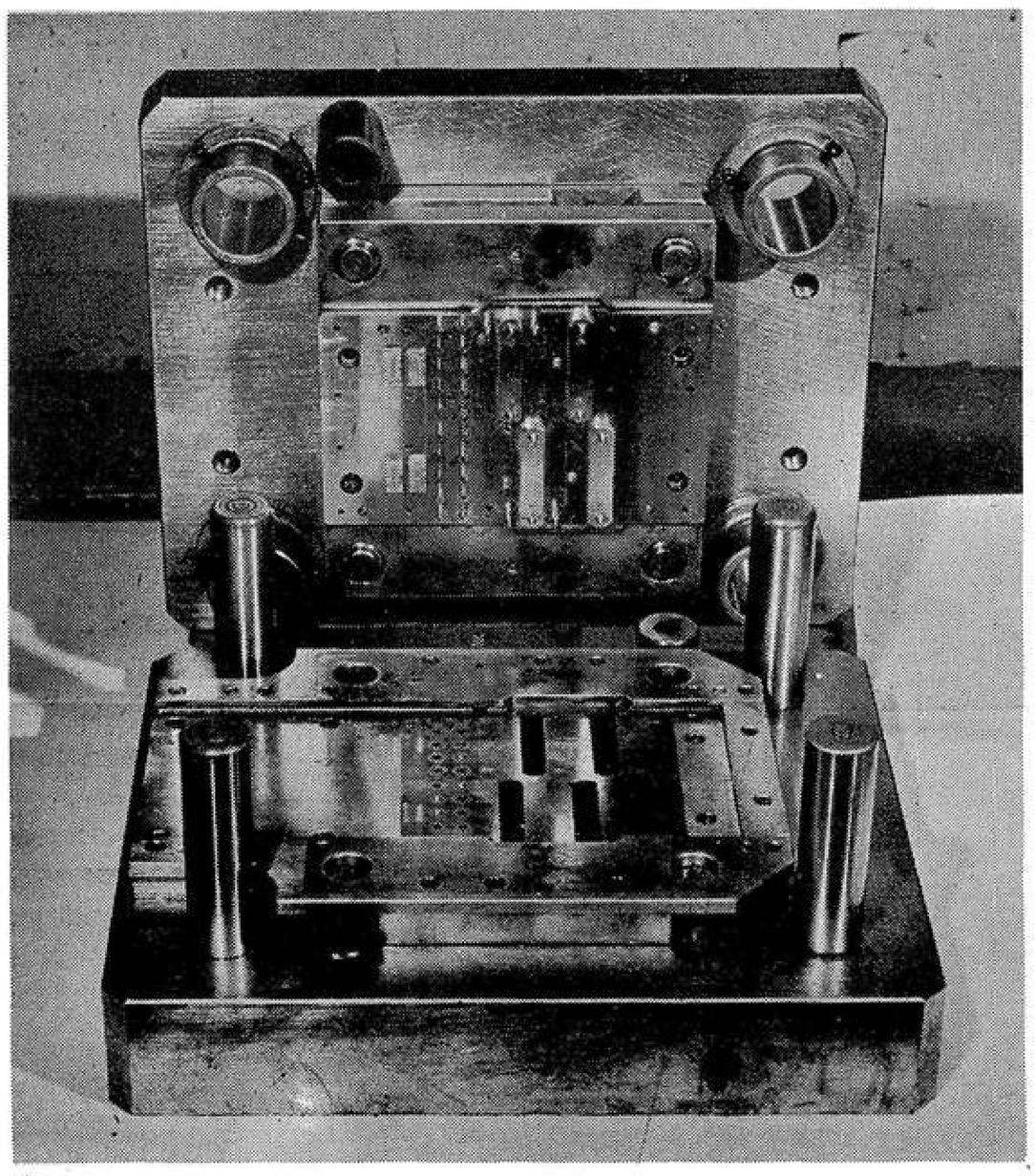
PARTS REQUIRED

4- 2	1-22	6- 48a	2-187
2- 3	1-23a	1- 51	1-188
9- 5	1-26	1- 52	1-190
2-11	1-27a	4- 63	1-191
1-11a	1-35	1- 90a	2-192
10-12	64-37a	3-111c	4-215
2-12c	60-37b	2-125	2-221
2-15b	14-38	2-126	4-P84
1-16	2-48	1-186a	68-P91
1-17	1 No. 1 Clockwork Motor		

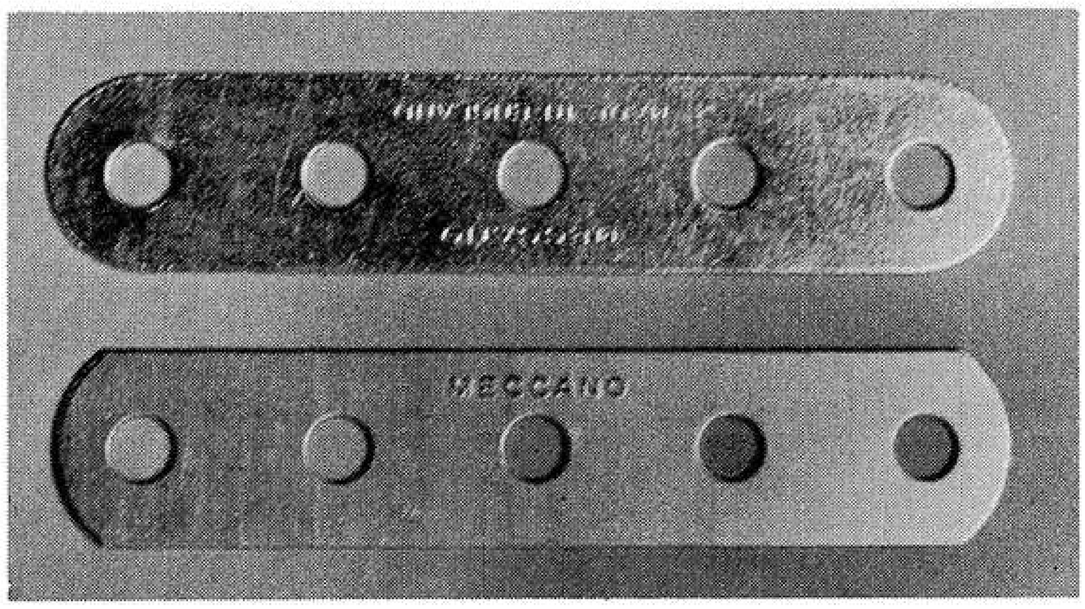
STRIP OFF ... AND CHANGE



Above, a close-up view of the lower section of the new 2½" Strip press tool with a sample length of raw material in position. Note that the holes are punched before the Strips are blanked out. Below, the complete press tool. Right, a comparison between the old Strip (top) and the new.



The Editor describes a new, more efficient manufacturing method for Meccano 2½" Strips



IN THE future – if not already – keen-eyed modellers will notice a slight alteration in the design of that most popular of Meccano components, the 2½" Strip, Part No.5. It will be seen that the ends of the new Strip have a slightly larger curve-radius, i.e. the curve is not so great, and also the Strip is *fractionally* shorter in overall length – although the size of the holes and the distance between them remain unaltered.

SCRAP REDUCTION

The reason for the change is to reduce the inevitable wastage on scrap metal – and I can tell you that the saving is enormous: a staggering 60%!

In basic terms, 2½" Strips are produced by feeding a 5¼" wide strip of steel into a power press which then punches out the Strips, four at a time. In the past, the Strips have been punched out in such a formation that a small area of waste metal remains surrounding the "hole" from which each Strip has been punched, as shown in the accompanying illustration. This is perfectly normal practice, I should add, but in our case it has meant that, leaving sufficient metal to "balance" the punching out of each Strip, has resulted in no less than 15% of the steel raw material remaining as scrap. With the new system, developed by our own engineers, the scrap has been greatly reduced from 15% to 6% – i.e. a *scrap saving* of 60%!

This minor miracle has been achieved by the design and production of a new press tool which, although it

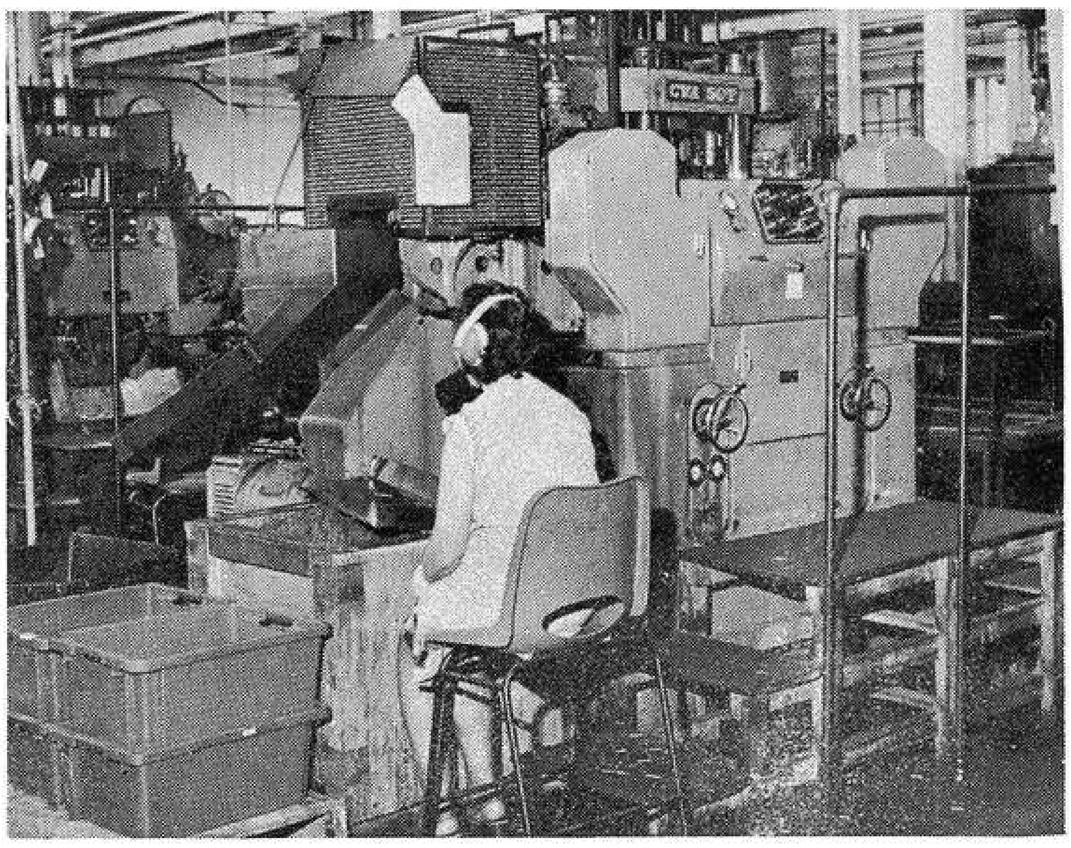
still punches out 2½" Strips in blocks of four, has the four actual punches in different positions. In the old tool, the punches were positioned so as to leave the minimum possible waste metal between the Strips; in the new tool the inter-Strip metal is *exactly* the width of a Strip. Thus, after the 'first' four strips have been punched out, the raw material continues to feed into the press and the inter-Strip material is then punched out – in the form of complete 2½" Strips!

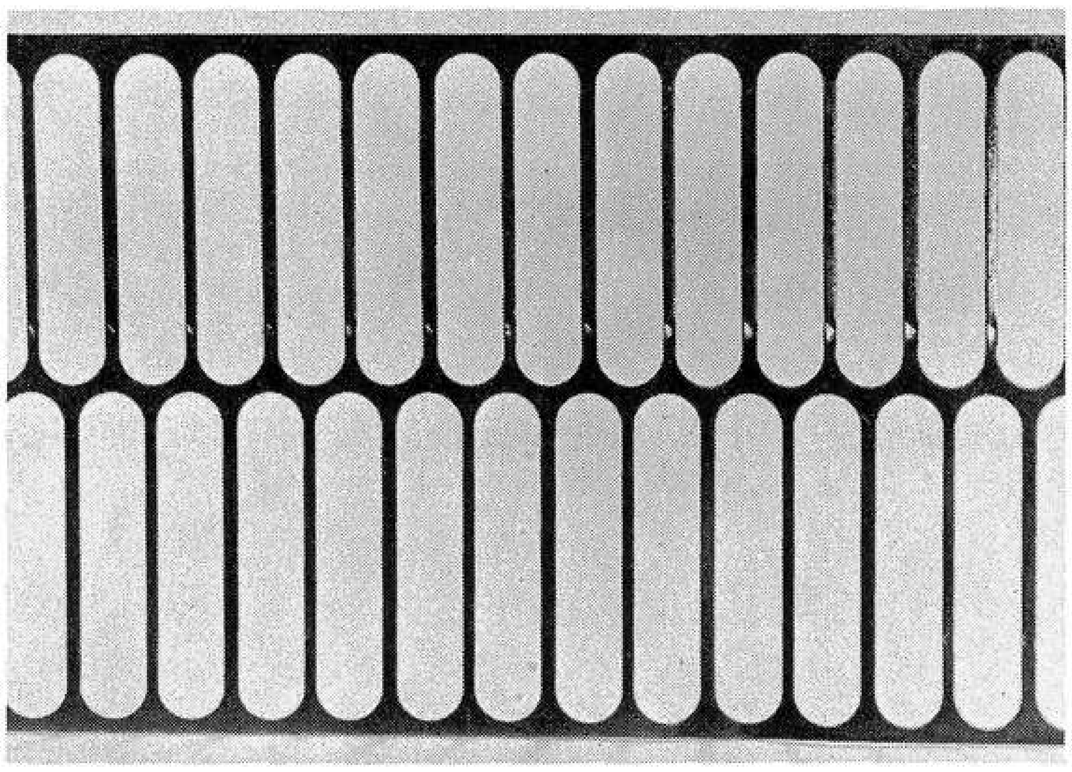
Perhaps the best way to illustrate the obvious savings of material under the new system is to consider the scrap metal which emerges from the press during production. With the old press tool, this was a "lace web" of metal, the width of the original raw material, looking like, indeed what it was, a strip of steel full of holes the size of a 2½" Strip. With the new tool however, all that emerges are three separate and very narrow ribbons of steel, the appropriate edges serrated where the curved ends of the Strips have been.

Why, you may ask, was it necessary to change the end design of the Strip? Well, if the previous design was used, the more pronounced end curves would have resulted in the points of the serrations mentioned above being excessively long and sharp. As tests showed, there would have been a tendency for these points to catch beneath the actual Strip punches and this would rapidly cause the punches to wear. As Mr. John Higham, Manufacturing Director at Meccano, said: "From the production viewpoint the ideal shape for the ends of the Strips would have been square – but this of course would have been totally impracticable from the model-building point of view. The present shape is therefore the best compromise, reducing the danger of punch damage without having any adverse effects on the model-building characteristics of the Strips.

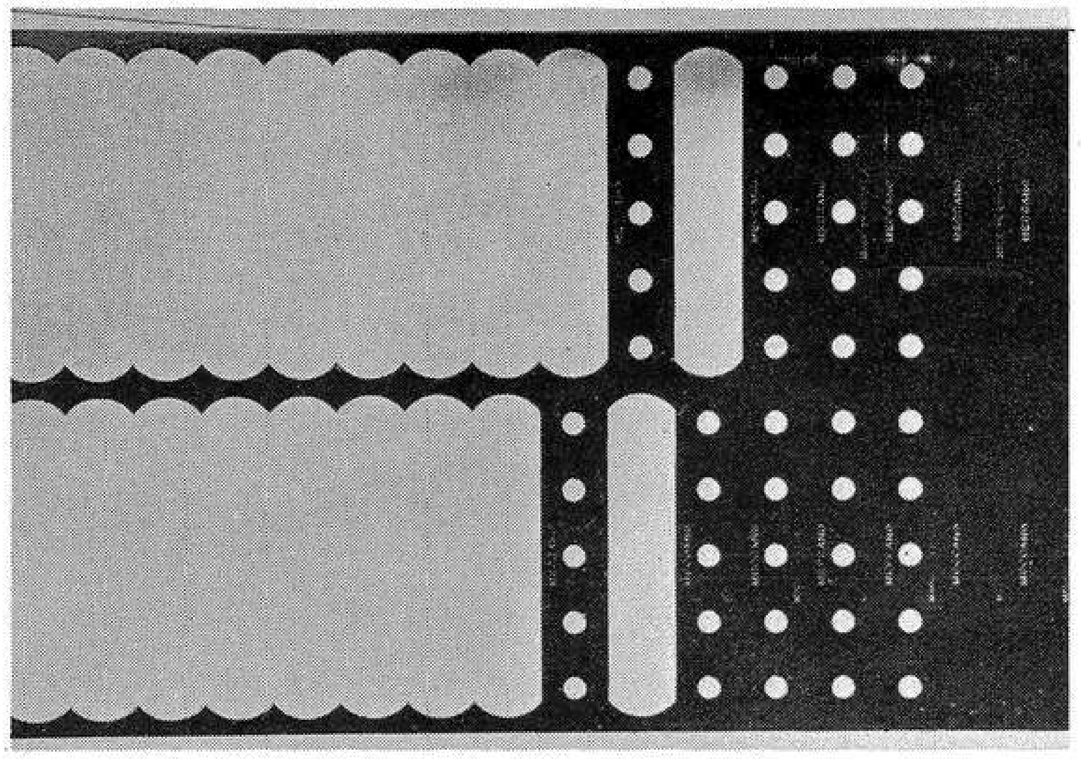
"The 60% saving on "frame scrap", to use the technical term, represents a total raw material saving (on 2½" Strip production) of 9% and this is a significant amount. The raw material, however, accounts for only one of many continually rising costs involved in Meccano part production, so MMQ readers regretfully cannot look for a reduction in the retail price of the Strips. The new tool alone cost £3,000! What the saving should do, though, is help us to keep down the level of any future price rises which might be forced upon us," said Mr. Higham.

A general view of the CVA 50T Press Machine in which the 2½" Strips are manufactured. The press tool can be seen at the top centre of the machine. The operator in the foreground, incidentally, is wearing ear muffs, not earphones!





Above, a sample of raw material scrap remaining after production of the old 2½" Strip. Compare it with the tremendously-reduced scrap quantity (below) resulting from the new production method. The lower picture also illustrates that the Meccano name and the holes are punched before the Strips are finally blanked out.



At the present time the 2½" Strip is the only part to be produced by the new system, being chosen mainly because it is required in such enormous quantities. However, with new press tools, the same system could be used for any Strip which is punched out laterally from its raw material and I understand that, as existing tools wear out, there is every chance that they will be replaced with the new type of tool. With our press equipment, Strips up to 7½" in length can be punched laterally, but above this length, they must be punched lengthwise.

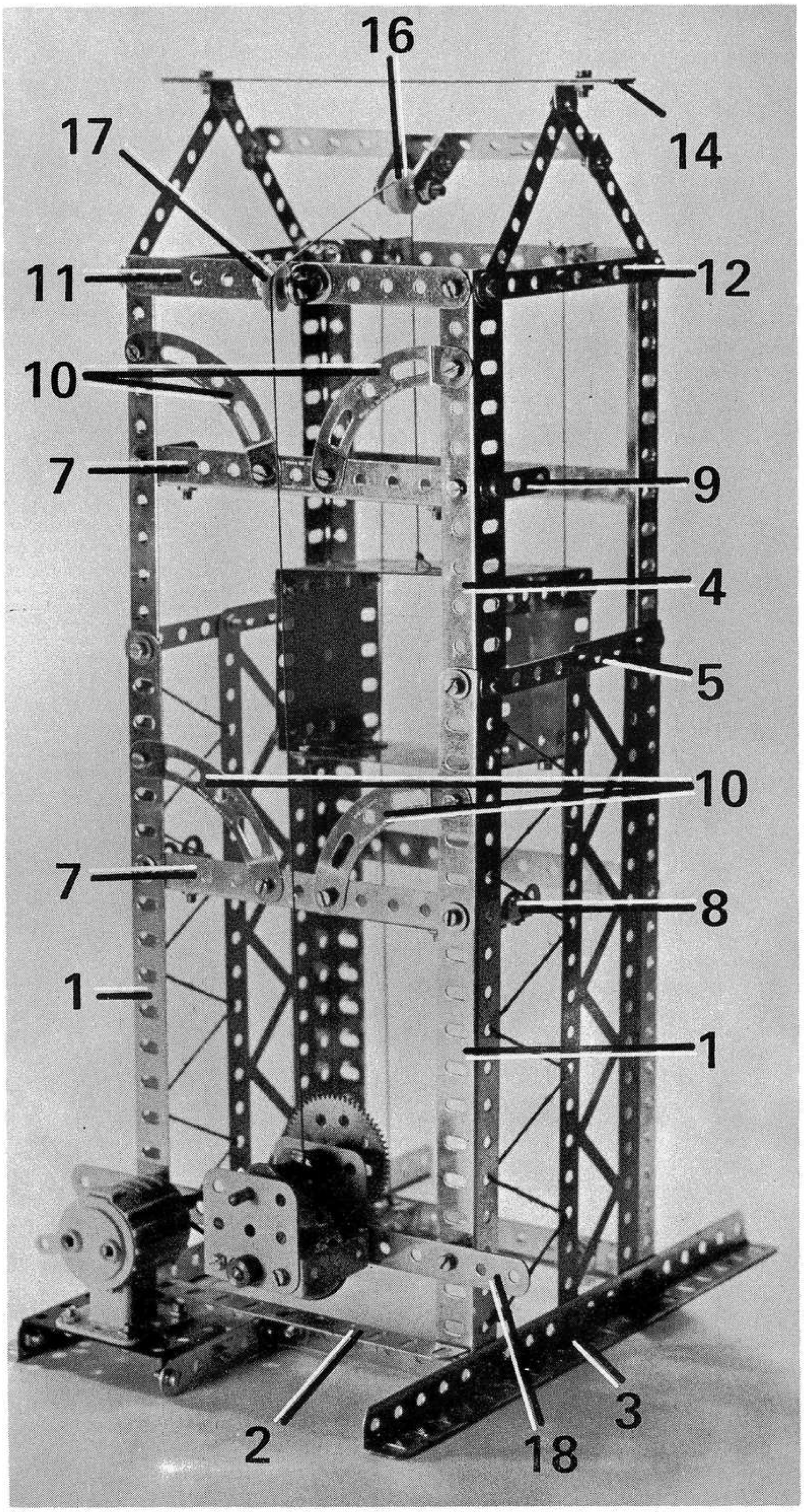
Anyway, after reading this, I don't think anybody can say that our Binns Road boffins never study Meccano methods!

* * *

FOOTNOTE

Good news for advanced modellers: the recent near-impossibility of obtaining 24½" Angle Girders should soon be a thing of the past. Apparently what has kept production to a trickle has been the difficulty of plating the Girders, but the problem has at last been solved. I'm told we can now turn out up to a thousand a day, so our dealers will soon be able to meet all your needs!

WAREHOUSE LIFT



'Spanner' describes an easy-to-build, working model produced from the new Crane Multikit

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NOW BECOMING generally available in the shops is this year's new Meccano Multikit – the Crane-building Set – and all the indications are that it is already well on the way to success. Containing standard Meccano parts, of course, the Set, despite its title, is not limited exclusively to crane models and, in fact, two bridges are illustrated in the Set's Model Book. And this brings me to the model featured here. As you can see, it is not a crane – we have actually titled it "Warehouse Lift" – but it can be built from the Crane-building Set (although the prototype illustrated was actually built from the appropriate selection of standard-coloured parts to save breaking into a new Multikit). Thanks to the gears and new motor contained in the Crane Set, it makes a very interesting working model.

CONSTRUCTION

Construction is remarkably easy. The main lift shaft is built up from four vertical 12½" Angle Girders 1 connected together at their lower ends by two 5½" Angle Girders 2 and two 9½" Angle Girders 3. Note that each pair of Girders 1 are bolted to each Girder 3 through the sixth holes from each end of Girder 3 which means that Girders 1 are 4½" apart in this instance.

Girders 1 are now each extended ten holes upwards by a 5½" Angle Girder 4, at the same time fixing a 4½" Narrow Strip 5 between the uprights at each side. The uprights are further connected together at the front by two 5½" Strips 6 and, at the back, by two 5½" Angle Girders 7. Bolted to the horizontal flange of each of the latter Angle Girders is a platform provided by a 5½" x 1½" Flexible Plate, to each end of the lower of which two Angle Brackets 8 are bolted, while in the case of the

upper Plate, a 1½" Narrow Strip 9 is bolted to nearby Angle Girder 4 to enclose the end of the platform. Two bracing 4" Stepped Curved Strips 10 are secured between the vertical flange of each Angle Girder 7 and upright Angle Girder 1 or 4, as the case might be. Bolted between Narrow Strip 5 and Angle Girder 3 at each side of the model is a 12½" Braced Girder, then threaded between this Braced Girder and nearby Angle Girder 1 is a length of Cord, arranged in a zig-zag pattern, as shown, to enclose the remaining space.

The upper ends of Angle Girders 4 are now connected at the front and back by a 5½" Strip 11 and, at each side, by a 4½" compound narrow strip 12 (built up from two 3" Narrow Strips), the securing Bolts also fixing two 3½" Narrow Strips 13 in place. Narrow Strips 13 are angled inwards to form a triangle and their upper ends are bolted together, the securing Bolt also fixing a 1" x ½" Angle Bracket in place. Fixed between these Angle Brackets at each side is a 7½" Strip 14. Two 2½" x ½" Double Angle Strips 15 are next bolted one to each front Narrow Strip 13 through its third hole from the top. The inner lugs of these Double Angle Strips are connected by a Double Bracket, at the same time fixing two Fishplates in position, the securing Bolts passing through the slotted holes in the Fishplates. A ¾" Bolt is locked by Nuts in the round holes of the Fishplates and running free on the shank of this Bolt is a ½" Plastic Pulley 16. Another ½" Plastic Pulley 17 is mounted, loose, on a ½" Bolt locked by Washers and Nuts in the slotted-hole lug of an Angle Bracket bolted to rear Strip 11.

Secured to rear Angle Girders 1 through their fourth holes from the lower ends is a 7½" Strip 18, spaced from the Girders by a Collar on the shank of each securing ½" Bolt. Secured by its lower corners to this Strip is a 1½" x 1½" Flat Plate 19, the securing Bolts also fixing two 1½" x ½" Double Angle Strips in position. Another 1½" x 1½" Flat Plate 20 is bolted to the outer lugs of these Double Angle Strips, then journalled in the bottom row centre holes of the Plates is a 2½" Rod carrying a 1½" Pulley 21 and held in place by a Collar on its outer end and a 7/16th" Pinion on its inner end. This Pinion meshes with a 60-teeth Gear Wheel 22 fixed on the inner end of another 2½" Rod journalled in the top row centre holes of Plates 19 and 20. This Rod also carries inside Plate 19, the Dog Clutch section and Winding Drum unit included in the Crane Multikit.

Now bolted in the position shown to the rear end of one Angle Girder 3 and to a 2½" Strip, attached to nearby Angle Girder 2 by an Angle Bracket, is a 2½" x 1½" Flanged Plate 23. Secured to the Flanged Plate is the 1½" x 4½" volt Motor contained in the Kit, the output shaft of the motor being connected to Pulley 21 by a 6" Driving Band. The lift itself is very simple in its design, consisting of a 3½" x 2½" Flanged Plate 24, to the flanges of which two 2½" x 2½" Flexible Plates are bolted. Attached to the lower edges of these Plates by 2" Angle Girders is a 3½" x 2½" Flexible Plate 25. Lift guides are simply provided by two lengths of Cord running through the front corner holes of Plates 24 and 25 and tied at top and bottom to Angled Brackets bolted to Strip 11 and Angle Girder 2. An appropriate length of Cord is secured to the top of Flanged Plate 24, is taken up and over Pulleys 16 and 17, then taken down and finally wound around the Winding Drum unit.

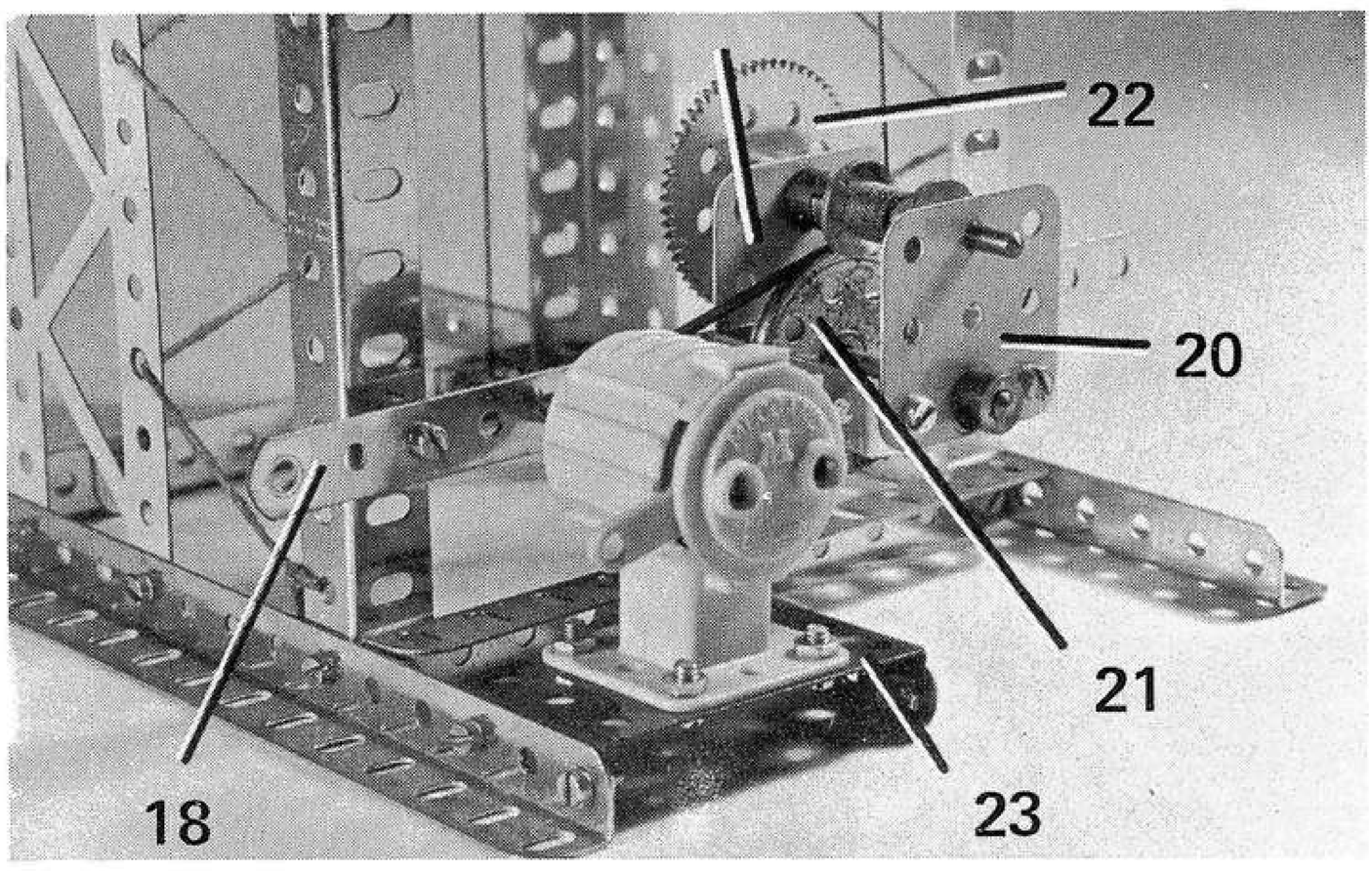
The following parts list quotes the Crane Set Part Numbers.

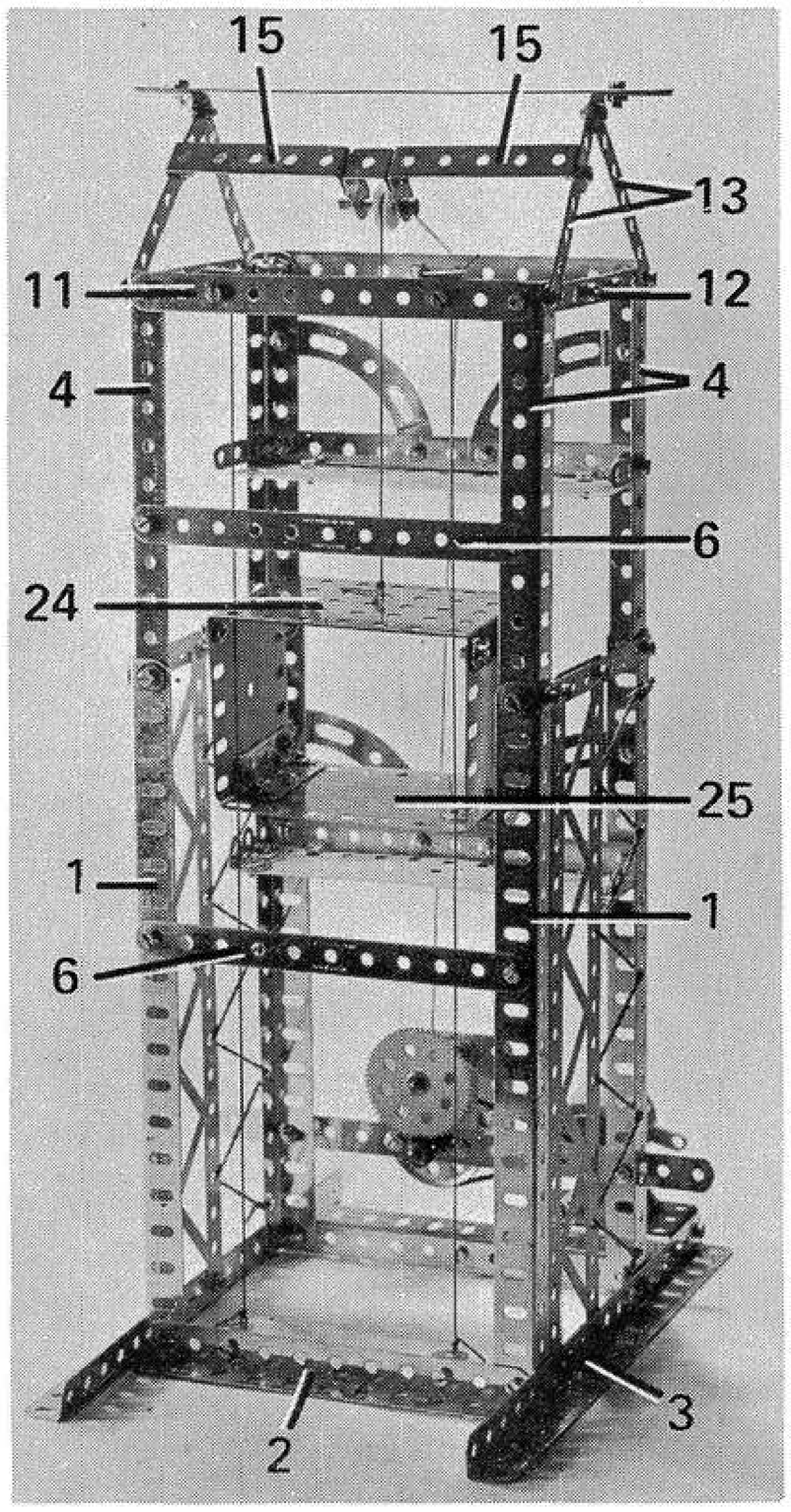
PARTS REQUIRED

2- 16a	2-189	4-313	2-355
1- 21	2-190	1-328	2-360
2- 23	1-190a	108-329	2-363
1- 26c	4-302	101-330	4-366
1- 27d	1-304	1-331	4-365
1- 40	8-305	24-333	2-367
3- 59	2-307	10-336	2-369
2- 99a	1-308	6-350	3-370
1-144a	2-309	2-352	1-672
1-186a	2-310	1-353	

1½v - 4½v Electric Motor

Although the Warehouse Lift described in this article is designed for building with the new Meccano Multikit Crane-building Set, the actual model illustrated here was assembled from the appropriate selection of equivalent standard Meccano parts to save breaking open a new Multikit. In the Parts Required list, however, we quote the Multikit part numbers. Pictured right and on opposite page are general views of the finished model; below is a close-up of the motor and winding drum unit.





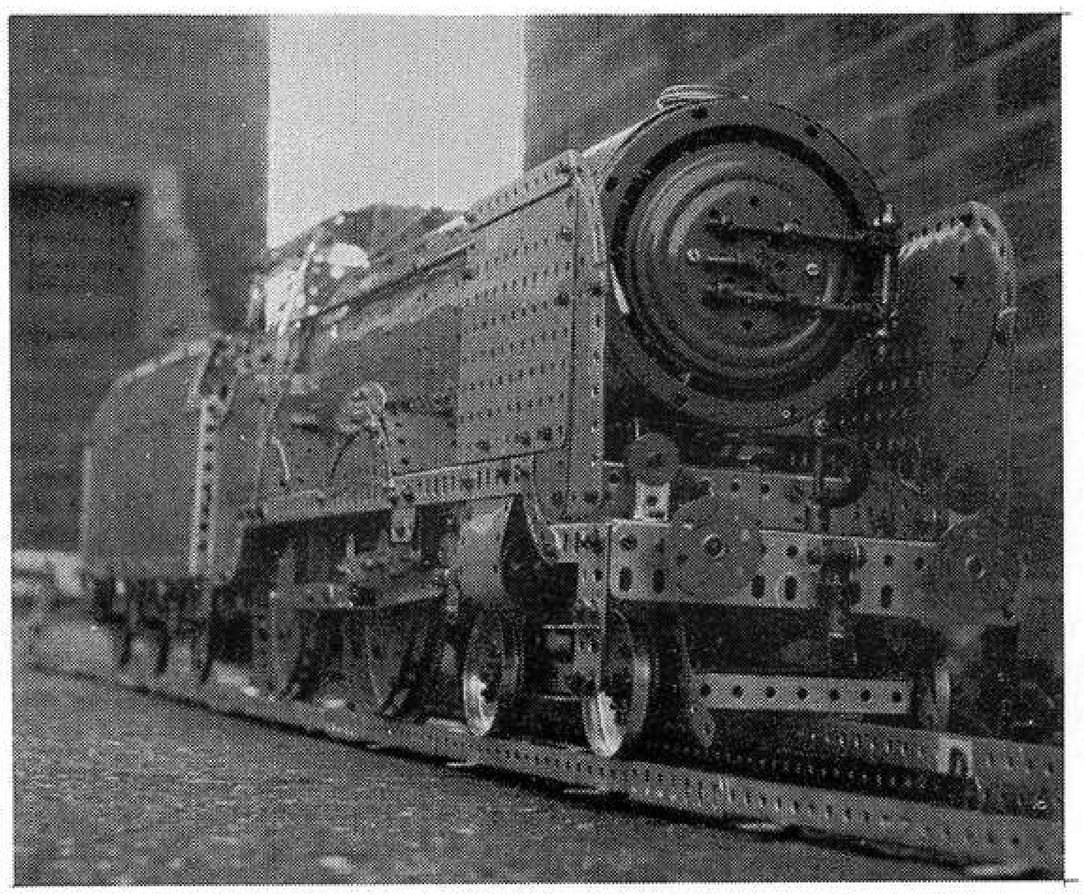


Fig. 1. The use of a close-up shot and low camera position produces a very impressive effect!

`GET IN CLOSE´

says Geoff Pratt in his "LET YOUR MODELS LIVE" series on cine-filming

MOVIE CAMERAS are at their best when filming in close up. One of the most significant limitations of 8mm movie film is its inability to record really fine detail. The reason for this is the high degree of magnification required to "blow up" that tiny photographic image into a picture three or four feet wide. Let's make no mistake about it, in the manufacture of movie film the makers achieve wonders that are little short of miraculous! But obviously if you are using an image that only measures approximately 4mm x 5mm then you cannot expect a favourable comparison with transparencies, where the image size is about 24mm x 36mm (35mm slides). The movie film just will not show the amount of detail that you will obtain on a transparency. Because of this, movie buffs are frequently advised to *get in close.* In other words, don't stand back and just film your subject from a distance, but move in close to your subject and take close-up shots of it.

Close-ups have *impact.* There is certainly a need for more long-distance views of your models, in, for example, establishing an overall impression of the entire model, or for showing a relationship between the model and some other object, such as perhaps the setting in which it is being filmed. Having shown some general views, the camera can then become the "eyes" of the audience, exploring the various constructional details and the mechanisms in close up, to show everything in great detail.

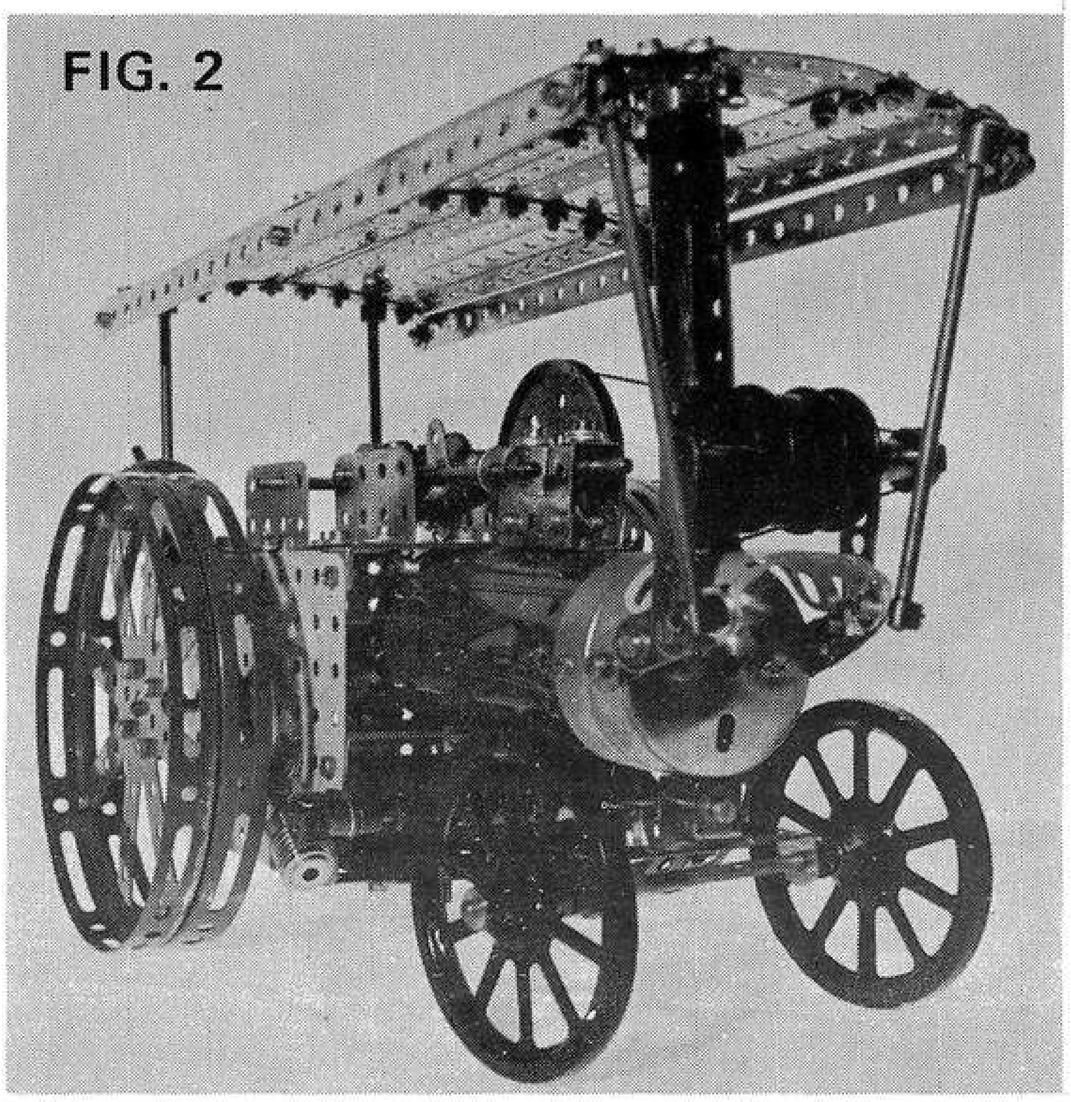
Close-up photography brings its own special problems and I hope in the fourth part of this series of articles to highlight these difficulties and show you how to overcome them.

PERSPECTIVE

Perspective is affected by the choice of camera position. You will probably remember having seen film on television of a cricket match. The camera is at one end of the wicket and you can see the batsman in the foreground shaping up to the bowler who is in the background, running up to bowl. Perhaps you noticed something peculiar about this shot. The bowler was more than 22 yards away beyond the batsman, yet they both appeared to be the same size. As the bowler ran towards the camera, he did not become any bigger on the screen. In effect he almost seemed to be running on the spot. Furthermore, the wicket which you know to be 22 yards long looked no more than a yard long. In other words, distances to and from the camera appeared to be compressed. This distortion of distances is caused by the fact that the cameraman was a long way from the subject he was filming. In order to show the players in close-up he was using a *telephoto lens.*

When we look at things with the naked eye, we expect objects further away to look smaller, and just how much smaller they appear to be is one way in which we judge how far away they in fact are. We are accustomed to seeing things in *perspective,* and the perspective which appears normal is that which we see with the naked eye. If we look at something through binoculars, a telescope, or a camera with a telephoto lens, then the reduced perspective of long-distance views is brought nearer and the scene looks "wrong". Objects further away are not seen as reduced in size as we would expect them to be.

In contrast, the camera should be using a *wide angle lens* and be positioned really close to the subject. The effect of this is to *exagerate* the perspective, as in scenes on television showing the 'patient's-eye view" of coming round after an operation or after being drugged. A nurse's



face comes in close and is distorted, with large nose and small ears. Details of the room behind her are disproportionately small.

These distortions of perspective are details which need to be watched as you film your models. With the advent of the modern zoom lens there is a great temptation to plonk the camera down in front of the subject, and then adjust the zoom lens to suit, so that the subject fills the view-finder. The trouble is that, with the small to medium-size models, you will probably find that you are zooming in so much in order to fill the viewfinder that you are using mainly the telephoto end of the lens's zoom range. And you now know what effect that gives! Reduced perspective! It is far more effective to *move in close* to your model and work with the zoom set to *wide angle.* In this way the perspective of the model is shown and if you combine a close-up view with a view from a low camera angle, you will obtain a view as though you were filming the prototype from normal eye level (fig. 1).

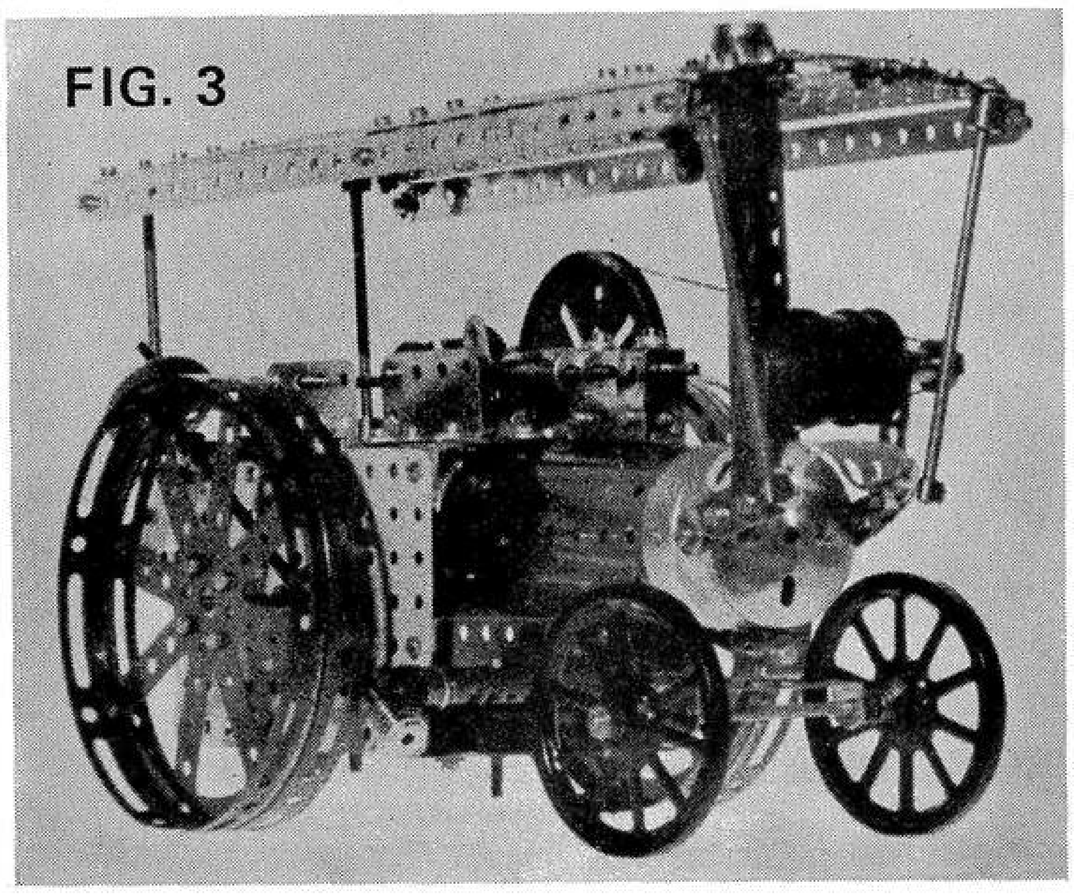
If you own a cine camera with a non-zoom lens, then the choice of camera-to-subject distance is governed for you by the size of the model and what area of it you are filming in particular. (Incidentally, don't despise a camera without a zoom lens. Zoom lenses may be fashionable and convenient, but they do have disadvantages. Generally speaking, a good non-zoom lens can knock spots off a good zoom lens as far as picture quality goes).

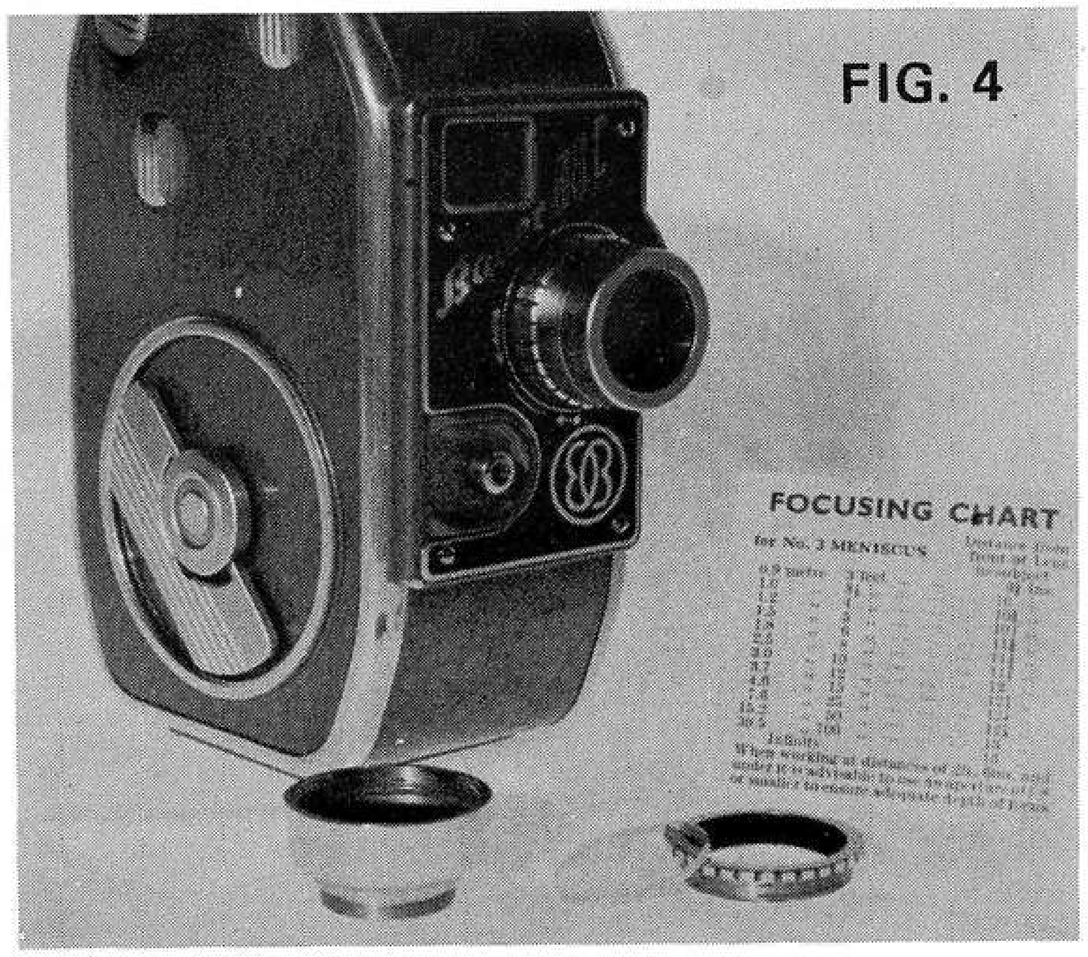
Cine camera lenses in general tend to be of a comparatively longer focal length than still camera lenses, so this matter of getting in close is even more important than with still photographs. Even with a "normal" setting for a zoom lens, this roughly corresponds in still camera terms to an x2 telephoto lens. What is considered a wide angle lens in cine is still only "normal" for still photography. So don't be afraid to move in close – you are unlikely to get so close as to get over-exaggerated perspective. However, you may come up against one or two other problems, namely *focus* and *depth of field.* We can now consider those problems.

FOCUS

If you are using a simple camera it is quite possible that, up to this point, you have never considered the

Compare the differences in perspective between a close-up shot taken with a wide angle lens (left) and a distant view taken with a telephoto lens (below).





An illustration showing a typical close-up lens, together with the lens mount and appropriate focussing chart.

problems of focussing, simply because your camera has no focussing adjustment. However, if you are to successfully film your models in close-up and obtain sharp, clear pictures, then you must consider focus. With non-focussing lens cameras there is a limit as to how close you can get before the picture gets out of focus. The instruction booklet for your camera will tell you how near this is, but under the best conditions it is not likely to be nearer than 4 or 5 feet. If you want to get any closer than this you will need a *supplementary lens* to fit over your camera lens (fig. 4). These are obtainable at reasonable cost from a good photographic dealer.

In case of difficulty in obtaining what you want, write and order direct from the manufacturer's agents, S.R.B. Film Services, 286 Leagrave Road, Luton, Beds. Make sure that you take your camera along to your dealer or give exact details of make, model, lens, etc. to ensure that you get the right size of supplementary lens and the correct type of *lens mount* for your particular camera to hold the lens in position securely. You can buy a No.1, a No.2, or a No.3 lens. A No.1 lens will enable you to film with a camera/subject distance of approximately 25" to 48"; a No.2 lens from 15" to 22"; and a No.3 lens from 11" to 13". These distances quoted here are approximate, but are given in detail on a chart supplied with the lens.

Cameras with focussing adjustment may also need a supplementary lens for really close shots. Many lenses only focus down to a minimum range of 3 or 4 feet, but some expensive modern cameras actually focus down to zero, which means you can actually film a postage stamp stuck onto the front element of the lens! (Useful for philatelists!) Rangefinding devices have been marketed to help you find the correct distance for setting focus, but for model work and close-ups I find the best method is to use a tape measure.

An important point to remember when measuring camera/subject distances; when using the camera *without* a supplementary lens, you measure from the level of the *film plane* in the camera. This is normally marked thus:– Ø (like a side view of Saturn on end). However, when using a supplementary lens on the camera, distances are measured from the *front face of the supplementary lens.*

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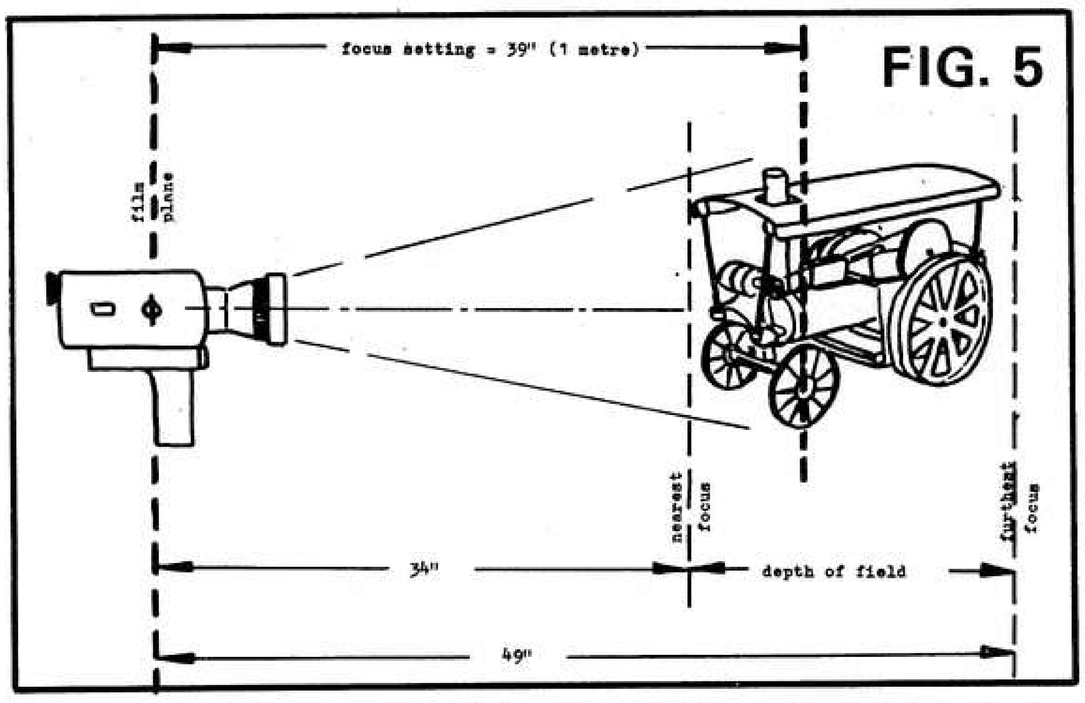

FIG. 5

A diagram illustrating "depth of focus". Note that a greater area remains in focus behind the focussing point than in front of it.

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DEPTH OF FIELD

If you adjust your focus setting to, say, 1 metre, you will find that objects 1 metre away are not the only ones which appear sharp on the screen. Some objects nearer and further than 1 metre away will also appear to be in focus, although they are in fact not quite as sharp as an object that is exactly 1 metre away. There is a limit as to how much nearer and how much further away from this 1 metre distance we can place an object without it appearing noticeably out of focus on the screen. The distance between these limits is known as the *depth of field* or depth of focus (see fig.5).

For normal filming of family, friends and on holiday, depth of field seldom raises problems. When filming in bright daylight and at the comparatively long distances in these cases, depth of field usually extends from 5 or 6 feet to infinity. As we move in close, the depth of field can dwindle down to a matter of only a few inches. The closer we focus, the smaller is the depth of field.

Now, there are two ways that we can combat this reduction of depth of field. Firstly by using the zoom lens at its wide angle setting. It is one of the facts of life in optics that the shorter the focal length of a lens the greater is the depth of field. By setting the zoom to wide angle we shorten the focal length and, hey presto!, maximum depth of field! Secondly, depth of field is also increased when we "stop down" or reduce the lens aperture setting (e.g. f11 gives greater depth of field than f.4). To quote a few examples:–

Example A
Telephoto setting of zoom – 38mm focal length.
Lens aperture – f.5.6.
focus – 79"
Depth of field extends from 75½" to 82"

Example B
Normal setting of zoom – 13mm focal length
Lens aperture – f.5.6
focus – 79"
Depth of field from 59" to 118".

If we now stop down to f.11, keeping the other setting unaltered, then the depth of field is further extended to from 48" to 207".

A point arising from all this is that, when measuring camera/subject distance, do *not* measure to the nearest point of the model, unless this is a feature of the model that is being shown in particular. Remember that depth of field extends both in front of and beyond the plane of focus. It does, in fact, extend *more* beyond than it does in front of the plane of focus. In fig.5 we see a camera set up to film a model whose nearest point is 34" from the camera and whose furthest point is 49" from the camera. As a rule-of-thumb guide, the depth of field extends twice as far beyond the plane of focus as it does in front of it. So, in this example, set the focus to a range of 39" (1 metre). This is further from the nearest point of the model by approximately *a third* of the distance between the two extremes of it. Awkward to explain in words, but the illustration should make the point quite clear.

So in order to get sharper pictures, use a wide angle lens where possible, rather than telephoto, and stop down the lens aperture as much as possible. The lighting must be bright enough to enable you to stop down and still get a properly exposed picture. With artificial lighting you can achieve this to some extent by moving the lights closer to the subject, so long as they do not appear in the picture of course! Otherwise you may need to increase the number of lamps from, say, two to four. If filming out of doors you are governed by the weather and must set the lens aperture accordingly, so a compromise may have to be made.

PARALLAX

Owners of cameras with a reflex viewfinder will not be troubled by this problem, but if your camera's viewfinder is independent of the camera lens then due allowance must be made for *parallax.* A separate viewfinder will "see" a different scene from that seen by the camera lens, in the same way that the view we see with the left eye is different from that which we see with our right eye. At distances of 4 or 5 feet or more the difference is so slight as to be negligible, but the closer we get, the more significant the difference becomes. In a later article we shall see how to prepare an alignment chart for extreme accuracy in setting up for close-up work. Meanwhile, as a simple rule-of-thumb method, aim the camera viewfinder at a point slightly to one side of the subject. The direction and how much to the side to aim will depend on your particular camera. If the viewfinder is on the left of the camera lens when facing the subject, then aim to the left of the subject. If on the right of the lens, aim to the right. If above, aim above. The distance to the side that you should aim is equal to the amount of offset of the viewfinder from the camera lens (fig.6). With a bit of practice, you should soon learn to be able to judge the parallax pretty accurately.

A diagram illustrating the effect of parallax in close shots using a camera with a non-reflex viewfinder. The lens "sees" a slightly different subject area than the viewfinder.

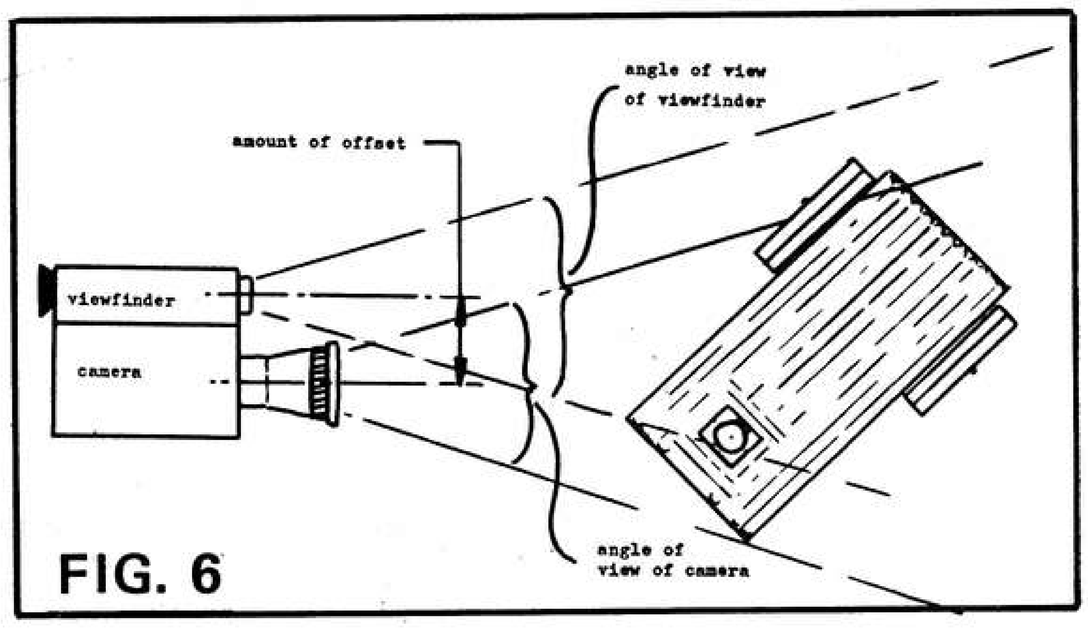
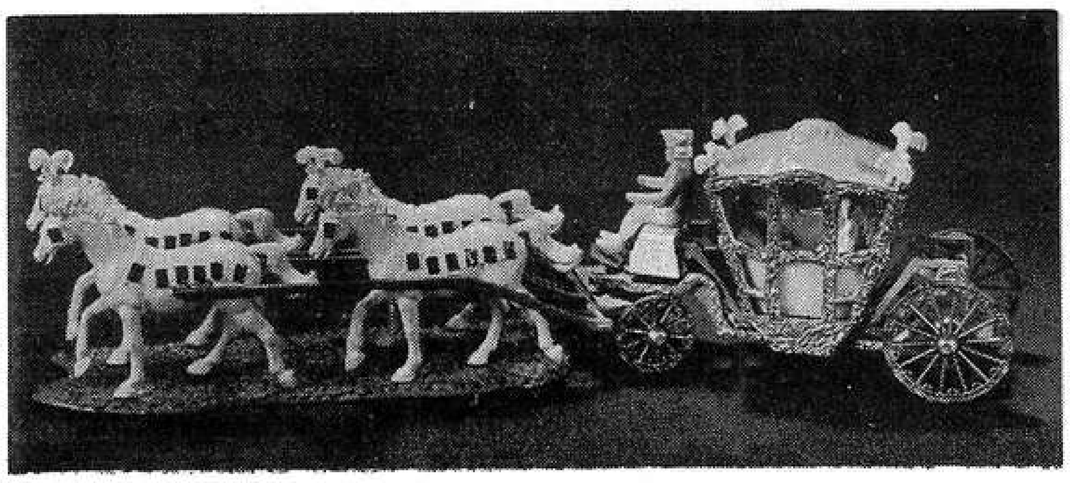


FIG. 6

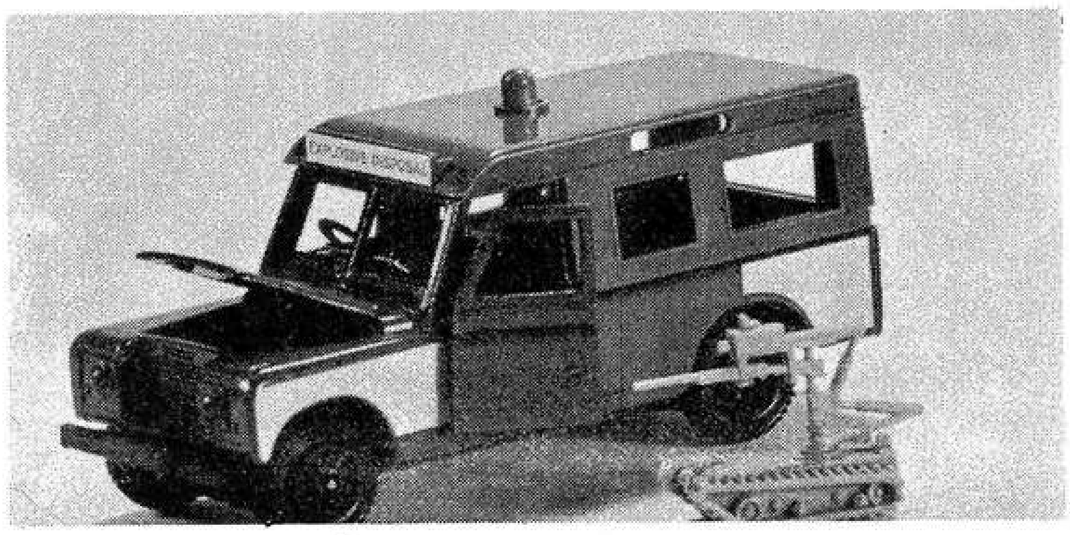
DINKY TOYS NEWS

A look at the new Dinky Toy models released since the last issue of "Meccano Magazine Quarterly".



Above, No. 111 Cinderella's Coach, based on an original in the Royal Command Film, "The Slipper and the Rose". The beautifully-detailed Coach comes complete with moulded figures of Cinderella and a Coachman, plus a team of four horses on a moulded cobblestone road. Measuring 241mm. in length, the Coach itself is finished in gold and pink, whilst the horses are finished in white. Below, No.266 ERF Fire Tender, produced to 1/42nd. scale and measuring 223mm. in length. Features include a glazed and "upholstered" cab, simulated bells, flashers and hose drums and a rotatable searchlight. Of special interest is a removable wheeled escape ladder which is self-supporting and which features an extending inner ladder. The model is finished overall in red with silver ancillaries, and carries "FIRE SERVICE" labels.

Below, No. 604 Land Rover Bomb Disposal Unit, produced to 1/42nd. scale and measuring 110mm. in length. Features include opening doors, an opening bonnet, glazed windscreens, a tow hook and Speed-wheels. The model also features a removable canopy surmounted by a simulated warning light. Overall finish is in military olive green with orange side panels, and the model comes complete with a "surveillance robot" which is supplied in kit-form.



Above No. 674 Coastguard Amphibious Missile Launch. Features include a robust body casting, a representation of a twin jet unit surmounted by a crosstreed mast, a detailed interior moulding complete with high-back seats and driver figure, a wrap-around windscreen and a searchlight. Of special interest is a spring-loaded hatch in the foredeck which rotates through 180° to reveal a working missile launcher that fires harmless plastic ammunition. Measuring 155mm. in length, the model is finished overall in white with blue ancillaries and a red interior.

Above, No. 668 Foden Army Truck, produced to 1/42nd scale and measuring 197mm. in length. The model features a heavy duty ten-wheeled chassis, and a cab which is fitted with opening doors, a fully "upholstered" interior and all-round glazing. In addition, the model features a moulded removable canopy, a drop-down tailgate and a tow hook. Overall finish is in military olive green, and the model comes complete with a sheet of military marking transfers for self-mounting. Below, a "civvy" version of the Foden – No. 432 Foden Tipper Truck. The Tipper features the same chassis and cab as the Army Truck, but sports a tipping load body, the elevation of which is "controlled" by a simulated hydraulic ram. Produced to 1/42nd scale and measuring 175mm. in length, the model is beautifully finished in red, with a white cab and yellow body.

Have an earth-moving time ! Try this AUTOMATIC EXCAVATOR says `Spanner´

JUST AS CRANES have proved to be consistently popular subjects for Meccano model-builders, so also have excavators, or mechanical shovels, always been high in the popularity ratings. This is a statement with which I think few modellers would argue, but because of the undoubted popularity of the subject, it came as something of a surprise to me to realise that we have not constructionally featured an excavator in the MMQ for the past three years! This, then, is a state of affairs which we now remedy with the Automatic Excavator featured here. Not a complicated model it is nonetheless a fairly comprehensive and well-proportioned reproduction and, as can be seen, it runs on crawler tracks provided by the Meccano Track Pack.

Actually, before dealing with construction itself, I should explain the use of the word 'Automatic' in the title. This does not mean that, at the flick of a switch, the excavator works away on its own, but it does mean that the complete 'digging' cycle of the model is performed automatically when a single control handle is turned.

Beginning construction with the chassis, this is built up from two 3½" x 2½" Flanged Plates 1 separated by a distance of one hole and connected together at the edges by two 5½" Angle Girders 2 and, in the centre, by a 4½" Strip 3. The Plates are extended forwards at front and rear by a 2½" x 2½" Flexible Plate 4 and two Formed Slotted Strips, the lower edges of the Plate and Strips being connected by a 3½" Strip 5. Bolted to the flanges of Plates 1 at each side is a 2½" x 1½" Flexible Plate, extended at each end by a 1½" Corner Bracket 6, the lower edges of the Plates and Corner Brackets being overlaid by a 5½" Strip 7, the securing Bolts also fixing two 3½" x ½" Double Angle Strips 8 between the sides of the chassis.

Two 3½" Narrow Strips 9 are connected together by Fishplates, the lower securing Bolts also fixing two Angle Brackets in place. The spare lugs of these Angle Brackets are bolted to the long lugs of two 1" x ½" Angle Brackets which are in turn bolted to Strip 7 at each side.

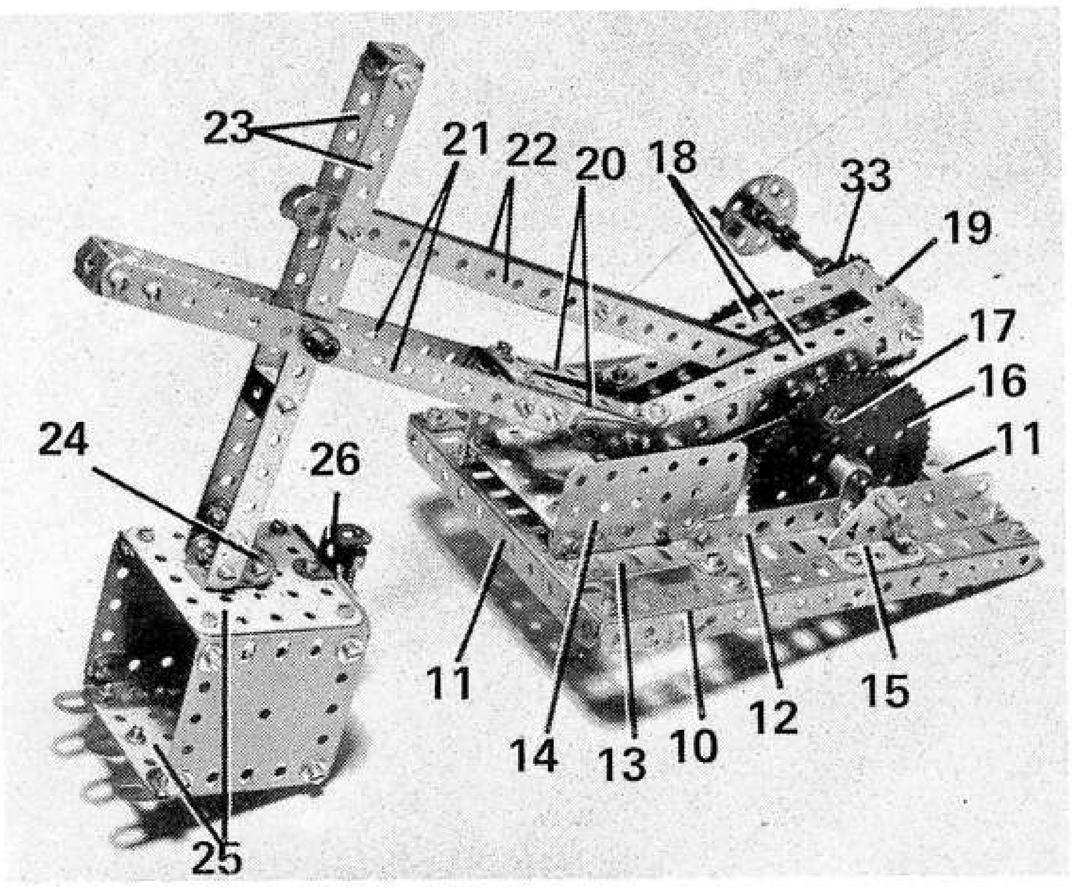
Journalled in the second holes of each pair of Corner Brackets 6 is a 5" Rod on the ends of which the 10-teeth Plastic Sprockets from the Track Pack are mounted, with Couplings being used as adaptors on the Rods to accommodate the Sprockets. The crawler track of course runs on the Sprockets and each track is made up from 42 Track Links.

BOOM AND CONTROL MECHANISM

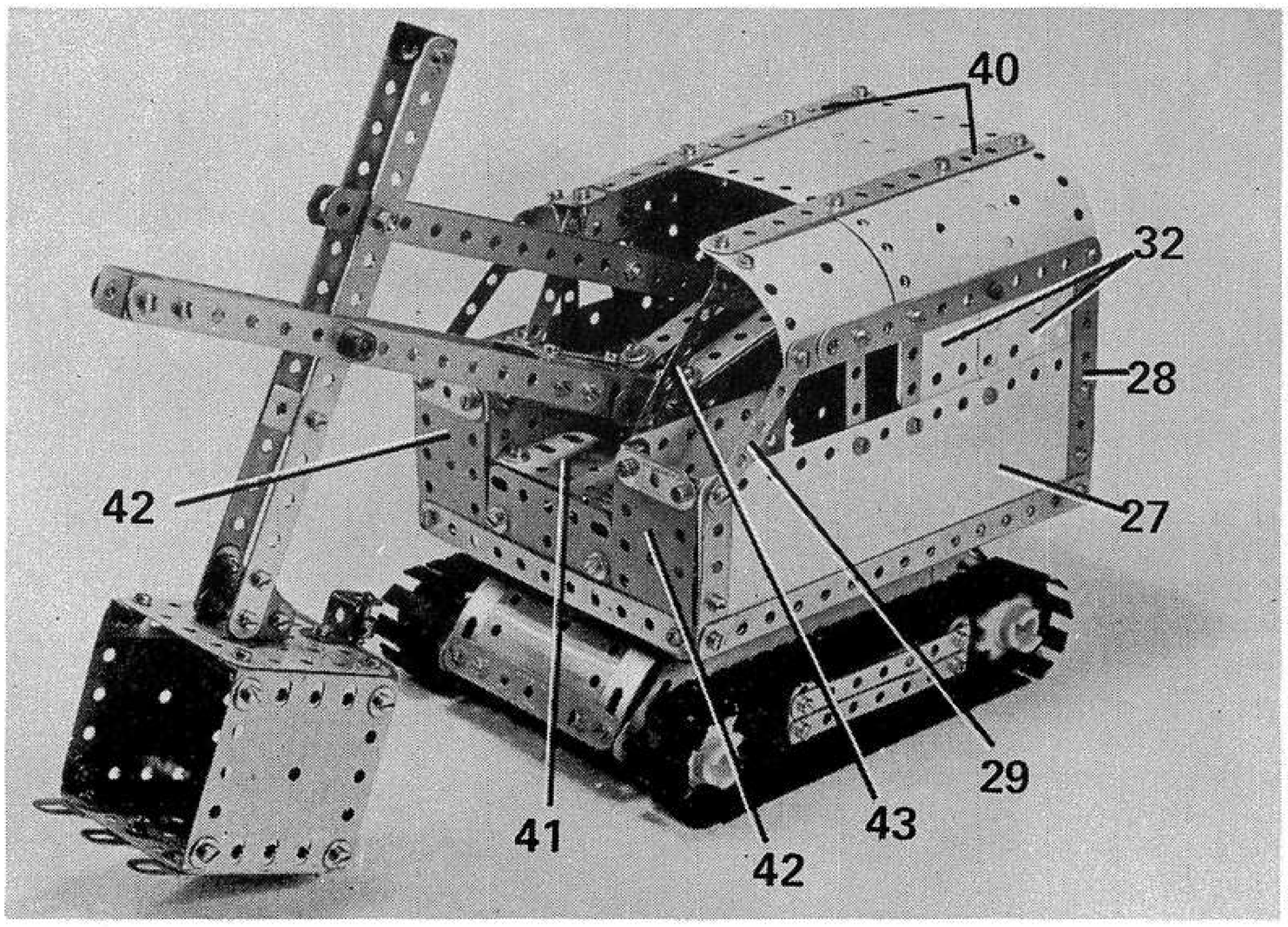
Next stage in construction should be to complete the boom and internal operating mechanisms. A supporting framework is built up from two 7½" Angle Girders 10 connected at each end by a 5½" Angle Girder 11. Counting from the front, Angle Girders 10 are further connected together through their fifth holes by a 5½" Strip, this Strip in turn being connected to rear Girder 11 by two 5½" Angle Girders 12 bolted one between the second hole from *each* end of the Strip and Girder. Bolted between the third holes from each end of the Strip and *forward* Girder 11 are two 2½" Angle Girders 13, to the vertical flange of each of which a 3" x 1½" Flat Plate 14 is bolted as shown.

Now bolted to the centre of the vertical flange of each Angle Girder 12 is a 1½" Corner Bracket, while a Trunnion 15 is bolted in a corresponding position to each Angle Girder 10. Note that the apex hole in the Trunnion must line up with the upper hole in the Corner Bracket, therefore spacing Washers are required between the Trunnion and the Angle Girder. Journalled in the Trunnion and Corner Bracket is a 1½" Rod held in place by a Collar and a 3" Sprocket Wheel 16. Tightly fixed to the face of this Sprocket Wheel through one of its outer holes is a Threaded Boss 17 which is connected by a 2" Rod to the corresponding Threaded Boss included in the similar arrangement built at the other side of the model. This Rod will later control the movement of the lifting and digging arms of the Excavator.

Turning to the main lifting arm, two "U"-section girders 18 are each built up from two 4½" Angle Girders, then the other flanges of each pair of "U"-section girders are connected at the rear end by a 1½" Angle Girder 19, as shown. Attached to the lower flange of each U-section girder, however, but spaced from it by three Washers on each securing Bolt, is a 4½" Strip, the forward securing Bolts also fixing the Strip – and thus the U-section girders – to a 1½" x ½" Double Angle Strip. This Double Angle Strip is, in turn, pivotally connected to another 1½" x ½" Double Angle Strip, the connection being



The boom and operating control mechanism removed from the Excavator. This section of the model can be assembled as a separate unit and the body then built round it. In the completed model, of course, the control wheel at the far corner of the unit would be positioned outside the body.



A general view of the completed Automatic Excavator described in this article. Hand-operated, it runs on crawler tracks.

achieved by a 2" Rod passed through the lugs of the Double Angle Strips and held in place by Collars. The lower Double Angle Strip is fixed on two ½" Bolts which are themselves centrally locked by further Bolts to the 5½" Strip connecting Angle Girders 10. The Double Angle Strip is thus raised approximately a ¼" above the 5½" Strip while being securely fixed to it.

Returning to the U-section girders for a moment, it will be appreciated that, because of the spacing Washers used, a gap exists between the lower flanges of the girders and the 4½" Strips attached to them. The 2½" Rod connecting Sprocket Wheels 16 passes through this gap and the gap should be sufficient to allow the assembly to slide back and forth on the Rod, but without excessive 'play'.

The front ends of U-section Girder 18 are now extended forwards and upwards by two 2½" Angle Girders 20 attached to the top flanges of Girders 18 by Obtuse Angle Brackets and to the sides of the Girders by 2" Strips. The forward ends of Girders 20 are angled inwards slightly and connected by a Fishplate, while the side flanges of the Girders are extended forward by two 7½" Strips 21, each overlapping Girder 20 by two holes. The forward ends of Strips 21 are connected together by a 1" x ½" Double Bracket.

The bucket control arm consists of two 9½" Strips 22 centrally positioned on the Rod joining Sprocket Wheels 16 where they are separated by a Collar. Note that they are free to swivel on the Rod. The forward ends of these Strips are also separated by a Collar on a ¾" Bolt passing through the second holes of the Strips, this Bolt also serving as the pivot for the front section of the bucket control arm, on which it is lock-nutted. This section of the arm consists of two 7½" Strips 23 connected at their upper ends by a Double Bracket and through their tenth holes down by another Double Bracket. Bolted to the lower ends of the Strips are 1" Corner Brackets 24, themselves connected by two more Double Brackets to which the digging bucket itself is attached. Note that this section of the bucket control arm is pivotally connected to the main lifting arm by a 1½" Rod passed through the seventh holes of Strips 22 and the centre holes of Strips 23 where it is held by Collars.

The digging bucket itself is really a cube with one open side. The top and bottom of the bucket are each supplied by a 2½" x 2½" Flat Plate 25, to which the sides – 2½" x 2½" Flexible Plates – are attached by 2½" Angle Girders. The back of the bucket is provided by another 2½" x 2½" Flat Plate, but this is attached to lower Flat Plate 25 only, using Hinges. A spring-loaded catch to keep the back of the bucket closed when digging is provided by a 2" Rod sliding in the lugs of a Double Bracket bolted to the Flat Plate, but prevented from excessive movement by Collars. A Compression Spring is carried between the upper Collar and the upper flange of the Double Bracket. The upper end of the Rod locates in the elongated hole in the lug of a ½" Reversed Angle Bracket 26 bolted to upper Flat Plate 25, as shown. Finally, digging tines for the bucket are provided by three Fishplates bolted to the forward edge of lower Flat Plate 25.

BODYWORK

Each side of the body is similarly built up from a 7½" x 2½" Strip Plate 27 bolted to Angle Girder 10, but projecting one hole below the Angle Girder. The lower edge of the Plate is edged by a 7½" Angle Girder, the forward edge by a 2½" Strip and the rear edge by a compound 4" strip 28 built up from a 3½" and a 2½" Strip overlapped four holes. Bolted to the upper front corner of the Strip Plate is a 2½" Narrow Strip 29 which is angled rearwards as shown and its upper end connected to the upper end of compound strip 28 by a 6" compound strip (built up from a 5½" and a 2½" Strip), at the same time fixing in place three 2½" x 2½" Flexible Plates 30, curved to shape to form part of the roof. The same Bolts also help to fix two 2½" Narrow Strips 31 between the compound strip and Plate 27 and they also hold two overlapping 2½" x 1½" Flexible Plated 32 in place to the side.

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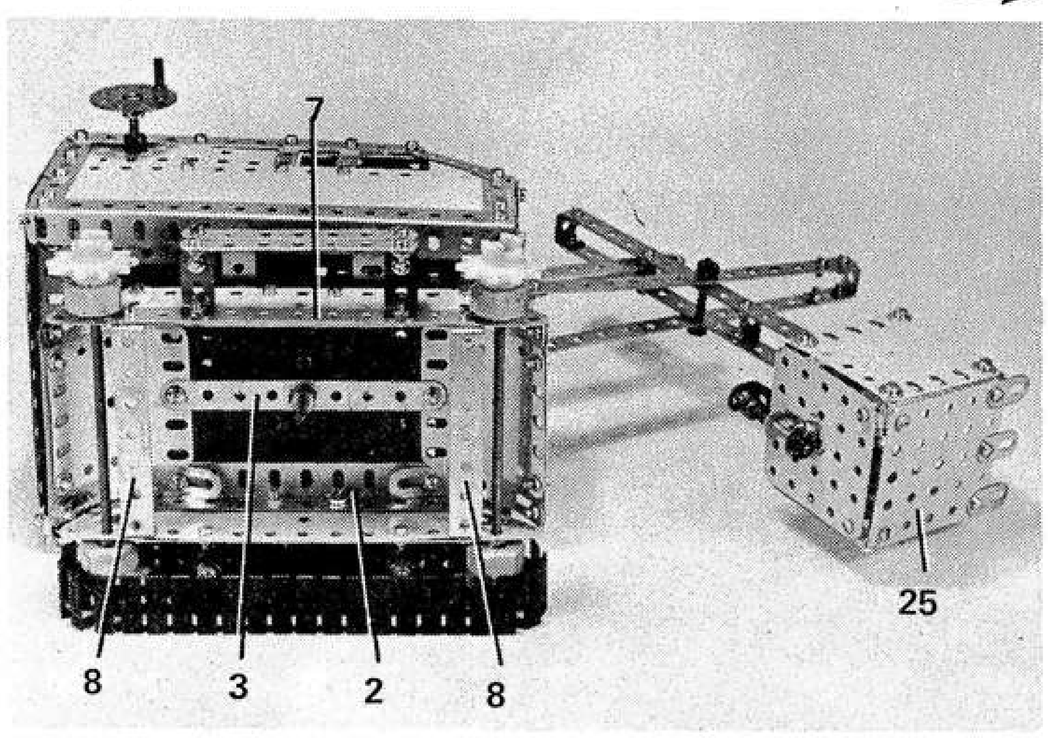
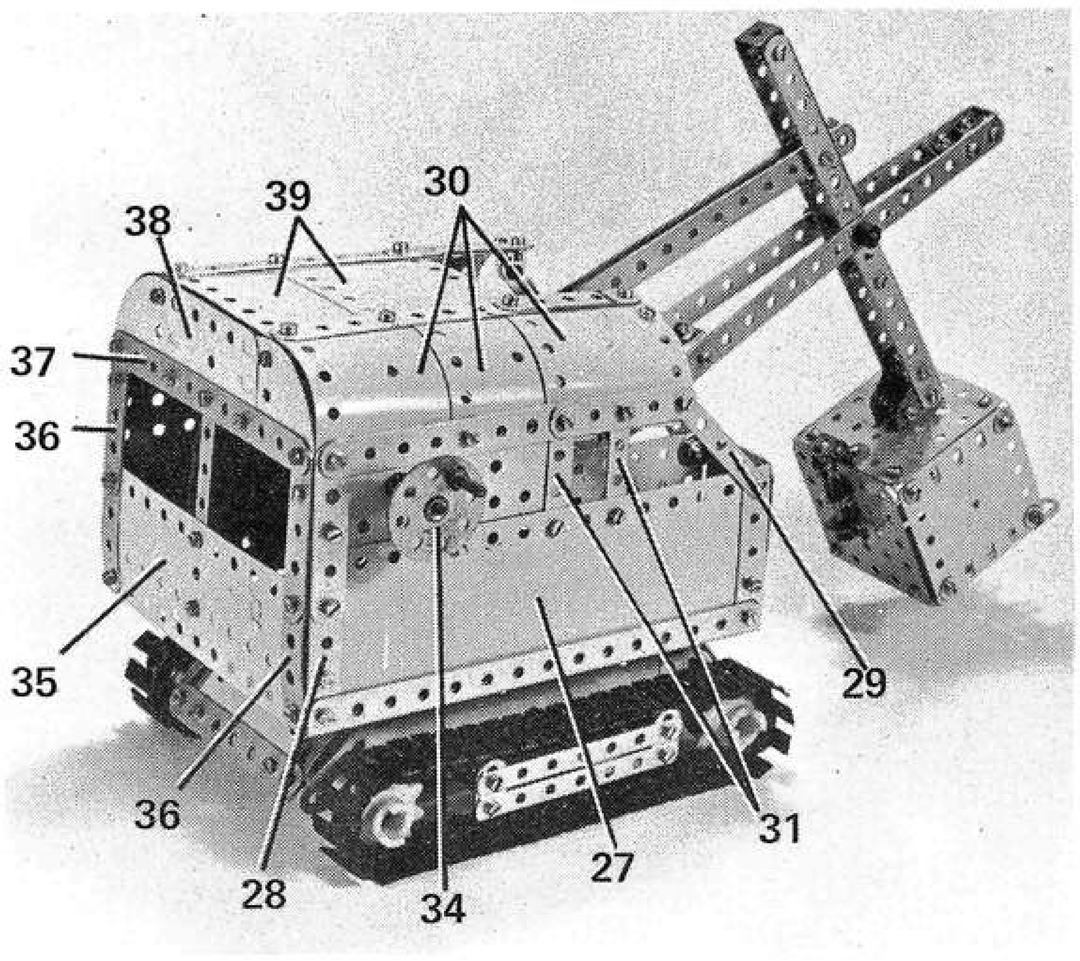


An underside view of the completed Excavator, showing chassis detail. Note that one of the crawler tracks has been removed to aid description. More photographs and details overleaf.



A general rear view of the Automatic Excavator described here and on the two previous pages. Although not a particularly complicated model to build, it is a comprehensive and well-proportioned reproduction.

←

At this stage, the movement control handle should be fitted while there is still room to work. A 2½" Rod is journalled in the *centre* hole in rear right-hand Plate 32 and in the upper end hole of a 2½" Strip bolted to right-hand Angle Girder 12 and braced by a 1½" Corner Bracket. The Rod is held in place by a Collar outside the Plate and by a 1" Sprocket Wheel 33 on the inside of the Strip, this Sprocket meshing with the teeth of right-hand Sprocket Wheel 16. The two Sprockets in effect are being used as gear wheels and, although this is not an orthodox Meccano principle, it does work quite well in practice! An 8-hole Bush Wheel 34, fitted with a Threaded Pin, is fixed on the outer end of the Rod to serve as the operating hand wheel.

At the rear of the model a 5½" x 2" compound flexible plate 35, built up from two overlapping 5½" x 1½" Flexible Plates, is bolted to rear Angle Girder 11, the edges of this plate being extended upwards by two 4" compound strips 36 each supplied by a 3½" and a 2½" Strip suitably overlapped. The Bolts fixing these compound strips to the compound plate also hold Angle Brackets in position, these being used to fix the plate to the sides of the body.

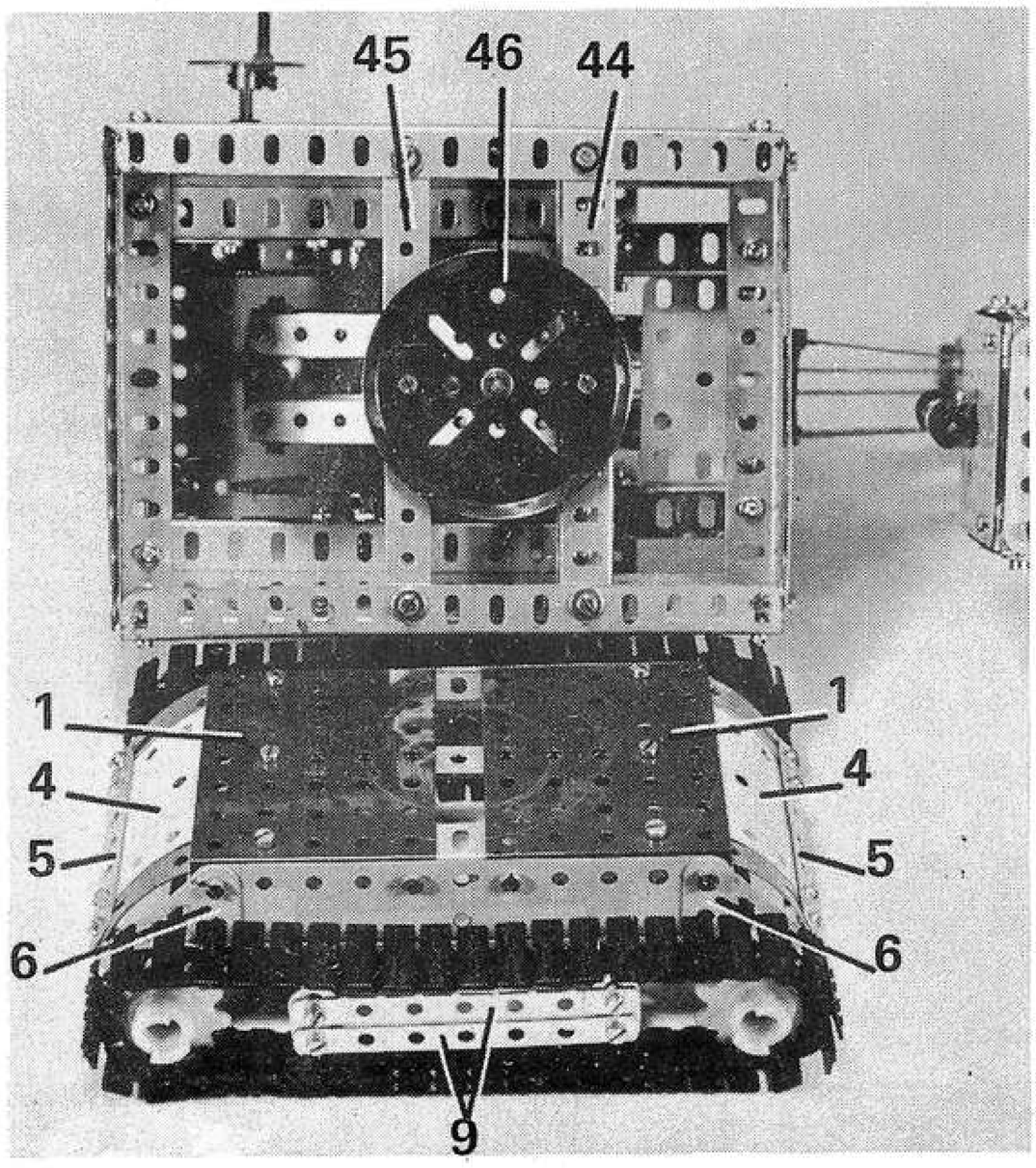
The upper ends of the compound strip 5 are connected by a 5½" Strip 37, the centre of which is connected to the centre of compound plate 35 by a 2½" Narrow Strip as shown. The back is then completed by two Semicircular Plates and a 2½" x 1½" Flexible Plate 38 all of which are bolted to Strip 37. The roof itself can now be completed by two 3½" x 2½" Flexible Plates 39 overlapped one hole and bolted to Flexible Plates 30, the connections being overlaid by two 6" compound strips 40 with the rear securing Bolts also fixing Angle Brackets to the Semicircular Plate at the back of the body. Each compound strip 40 is provided by a 4½" and a 2½" Strip overlapped two holes.

At the front of the body, a 2½" x 1½" Flexible Plate 41 is attached to Flat Plates 14 by Angle Brackets, then three more 2½" x 1½" Flexible Plates are bolted to front Angle Girder 11. The central one of these Plates is positioned horizontally, while the two outside Plates, numbered 42, are vertically mounted. The upper edge of each Plate 42 is overlaid by a 1½" Strip and is bolted to a 1½" x ½" Double Bracket which is itself bolted between the upper corners of nearby Flat Plate 14 and Strip Plate 27. Note that the Bolt fixing the lug of the Double Angle Strip to the Flat Plate also holds a 3" Narrow Strip 43 in place, this being angled rearwards and attached to the roof of the model by an Angle Bracket.

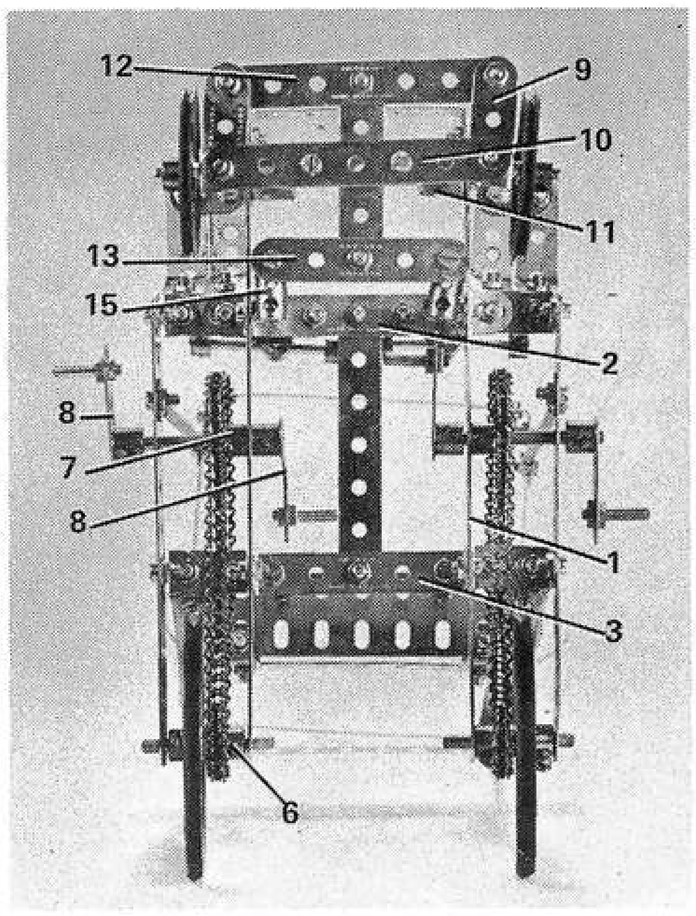
Now bolted between the fifth holes of the 7½" Girders secured to the lower edge of Plates 27 is a 5½" Angle Girder 44, two 5½" Strips 45 (one on top of the other) also being bolted between the Girders, through their ninth holes. Centrally fixed to these Strips and Girder 43 is a 3" Pulley 46, boss upwards, a 2" Rod being secured in this boss. Then, to finally complete the model, this Rod is located in the centre hole of Strip 3 of the chassis, where it is held in place by a Collar beneath the Strip.

PARTS REQUIRED

2- 1a	20-12	12- 59	5-113a
4- 1b	44-12b	4- 63	2-179
9- 2	2-12c	4-63c	9-188
5- 2a	2-15	3- 72	4-189
8- 3	1-16a	2- 73	2-190
11- 5	2-16b	2- 95b	2-190a
2- 6	2-17	1-96	2-195
6- 6a	3-18a	1-111	8-200
4- 8b	1-19b	3-111a	2-214
7- 9	1-24	4-111c	4-215
4- 9a	214-37c	2-114	7-235
8- 9d	201-37b	1-115	2-235a
1- 9f	60-38	1-120b	4-235b
8-10	3-48	1-125	4-P84
4-11	2-48a	2-126a	82-P91
1-11a			



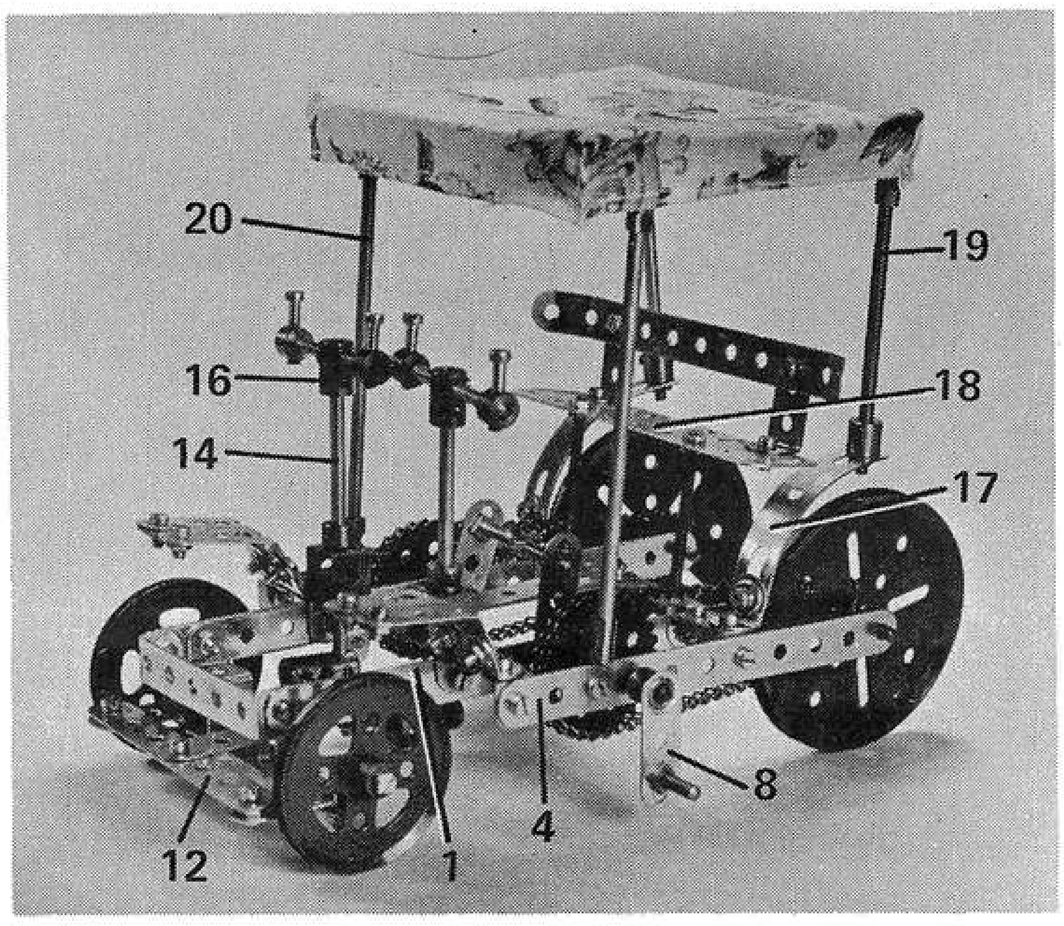
In this view of the Excavator the body has been separated from the chassis to show construction of the relevant areas. Note the positions of the 3" Pulley 46 attached to the underside of the body and its locating point in the Strip running between Flanged Plates 1.



JUST FOR FUN

*

`SPANNER´ describes a pedal car



THERE'S NOTHING like a little 'fun' model to tickle the fancy and I'm therefore hoping that you, like me, will be tickled (as Ken Dodd would say) by the little 'Cyclomobile' featured here. It's based on one of those fascinating pedal-powered, twin handle-barred machines found at seaside resorts in Britain and on the Continent, and, although it's not built from any particular outfit, I found it more than sufficiently appealing to warrant a page in this M.M.Q. I trust you will agree!

The chassis is supplied by two 7½" Strips 1 connected together by three 2½" x ½" Double Angle Strips, one at the front, one five holes from the front (2) and one five holes from the rear (3). The Bolts fixing Double Angle Strips 2 and 3 in place also fix Angle Brackets to the outside of the Strips and the spare lugs of these Angle Brackets are extended by Fishplates, to the outer ends of which two 5½" Strips 4, one at each side, are attached by further Angle Brackets. The centre holes of Double Angle Strips 2 and 3 are connected by a strengthening 3½" Strip 5.

Journalled in the rear holes of Strips 1 and 4 at each side is a 1½" Rod carrying a 3" Pulley and a ¾" Sprocket 6, bosses outwards, with the Pulley and Sprocket being spaced from each other by three Washers. The Sprocket Wheel is connected by Chain to a 1½" Sprocket Wheel 7 on a 2" Rod journalled in the fourth hole from the front of Strip 4 and in the corresponding hole of Strip 1, where it is held in place by two Cranks 8, the arms of which point in opposite directions to each other. A Threaded Pin is fixed in the arm of each Crank, the completed unit thus acting as the driving pedal arrangement. There are, of course, two similar arrangements, one at each side of the model.

The front wheels are each supplied by a 2" Pulley running free on a ½" Bolt locked by Nuts in the vertical lug of an Angle Bracket, to the other lug of which a 1½" Strip 9 is tightly fixed by a Nut on a ⅜" Bolt. Using the remaining shank of the Bolt, the assembly is then lock-nutted to one end of a 3½" Strip 10 which is secured by two Angle Brackets and two ½" Reversed Angle brackets 11 to Strips 1 of the chassis, as shown. Another 3½" Strip 12 is lock-nutted between the forward ends of 1½" Strips 9 to serve as the steering tie-bar.

Fixed to the centre of Strip 12 is a 2½" Strip, the inner end of which is bolted to a 2½" Strip 13 which links the lower ends of the twin-handle-bar assemblies. Each of these is built up from a 3½" Rod 14 journalled in chassis cross-member 2 and in a Double Bent Strip bolted to the top of the cross-member, the Rod being held in place by a Collar above the Double Bent Strip. The lower end of the Rod is fixed in one end transverse bore of a Coupling 15, the front end transverse bore of which is pivotally connected to one end of 2½" Strip 13 by means of a Bolt passed through the Strip and into the bore of the Coupling, where it is secured by the Coupling's Grub Screw. Fixed on the upper end of Rod 14 is a Short Coupling 16, in the transverse bore of which a 2" Rod is held. Two Collars, each fitted with a ½" Bolt, are secured one on each end of the Rod to provide the handle-bar grips.

The two rear mudguards are each provided by a Formed Slotted Strip 17 attached to the rear chassis cross-member by an Angle Bracket, while each front mudguard consists of two 2" Strips, bent to shape and attached to chassis cross-member 2 by two Angle Brackets bent forwards slightly to accommodate the slope of the mudguard. The forward ends of the 2" Strips are connected by a Fishplate. A seat is provided by a 4½" Flat Girder 18 held by Nuts on to two 2" Screwed Rods which are themselves held by Nuts in Double Angle Strip 3. Attached by 1" x ½" Angle Brackets to the Flat Girder is a 5½" Strip, curved to shape as shown to serve as the seat back. Finally, a square canopy frame is built up from 4½" Narrow Strips connected together by Angle Brackets, the frame being supported, via Rod and Strip connectors, on two 3" Rods 19 and two 5" Rods 20. The lower ends of Rods 19 are held in Rod Sockets fixed to the rear mudguards, while Rods 20 are attached by Rod and Strip Connectors to the appropriate holes in Strips 4.

This, then, completes the actual Meccano side of the model but, if you're handy with a needle and thread, you can easily make a little fabric canopy from a small square of spare cloth. This would locate on the canopy frame to really round off the model nicely!

PARTS REQUIRED

2- 1a	2-16	1-48	1-103c
3- 2	2-16a	3-48a	2-111a
3- 3	4-17	6-59	6-111c
2- 5	2-18a	4-62	4-115
4- 6	2-19b	2-63	2-125
2- 6a	2-20a	2-63d	2-179
6-10	78-37a	2-81	6-212
20-12	58-37b	1-94	2-215
2-12b	8-38	2-95a	4-235d
2-15	2-45	2-96a	Fabric Cover (optional)

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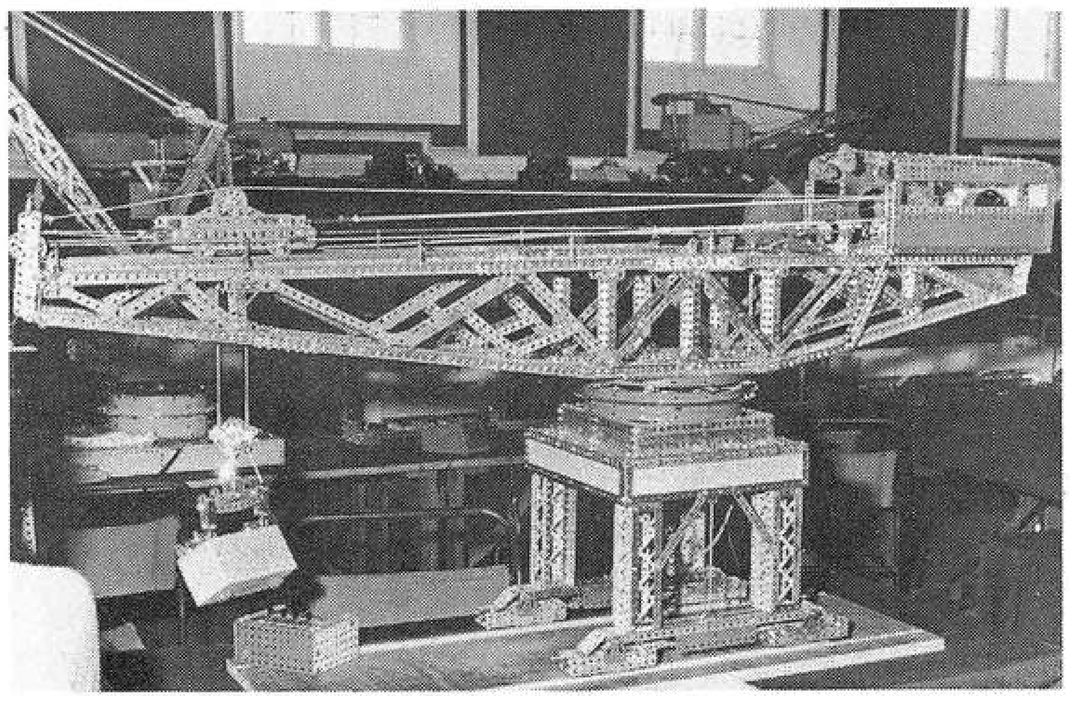
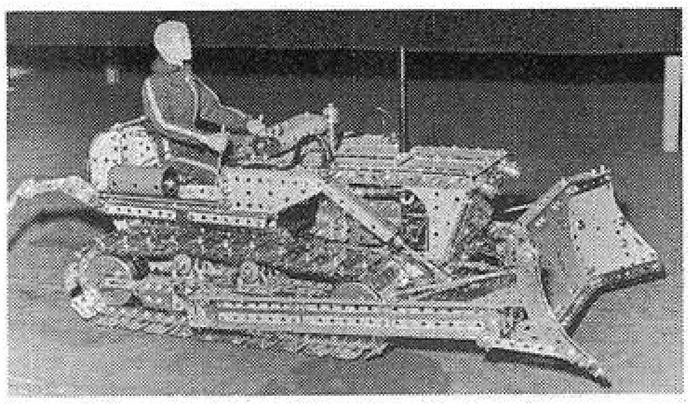
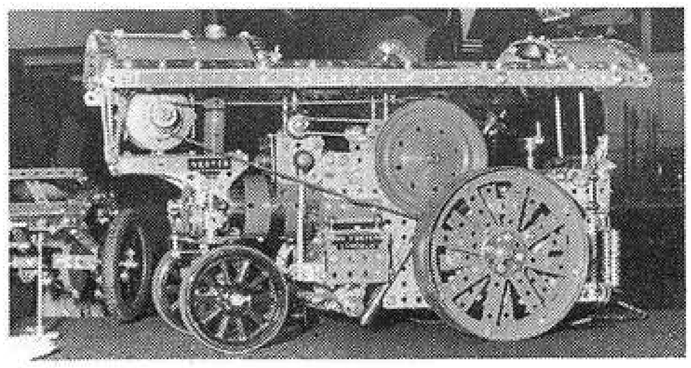
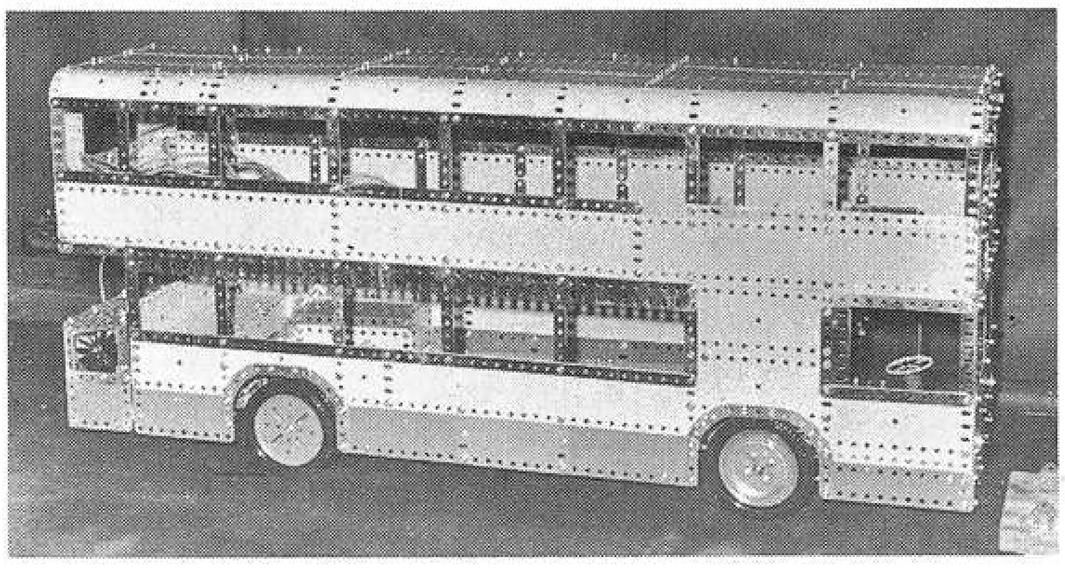
A photo report on the 5th ition held at Henley on

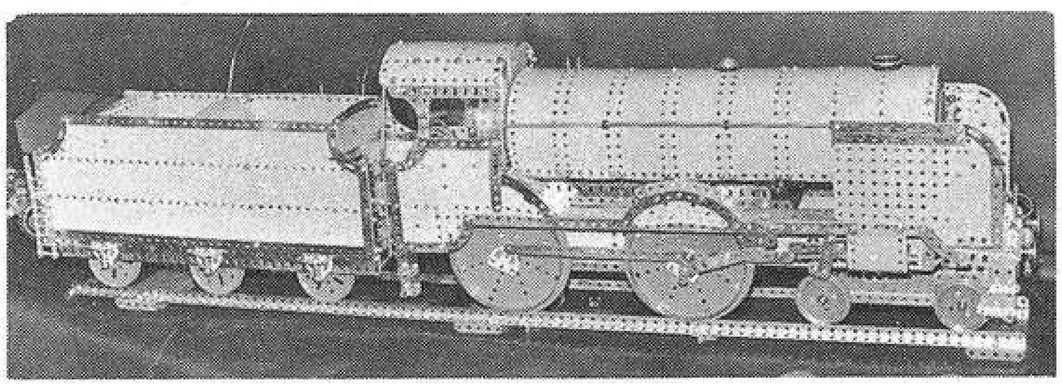




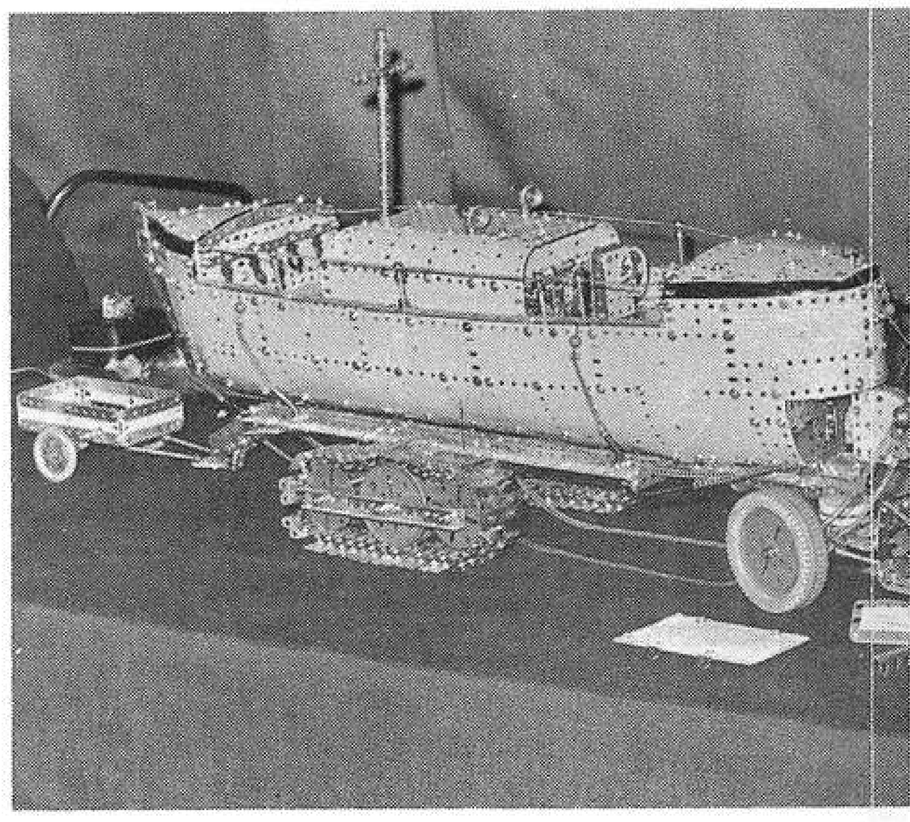


Above, always a Show favourite, a Giant Block-setting Crane by I. J. Evans of Pembrokeshire. Above right, a superb Bulldozer by Tony Rednall of the Solent M.C.

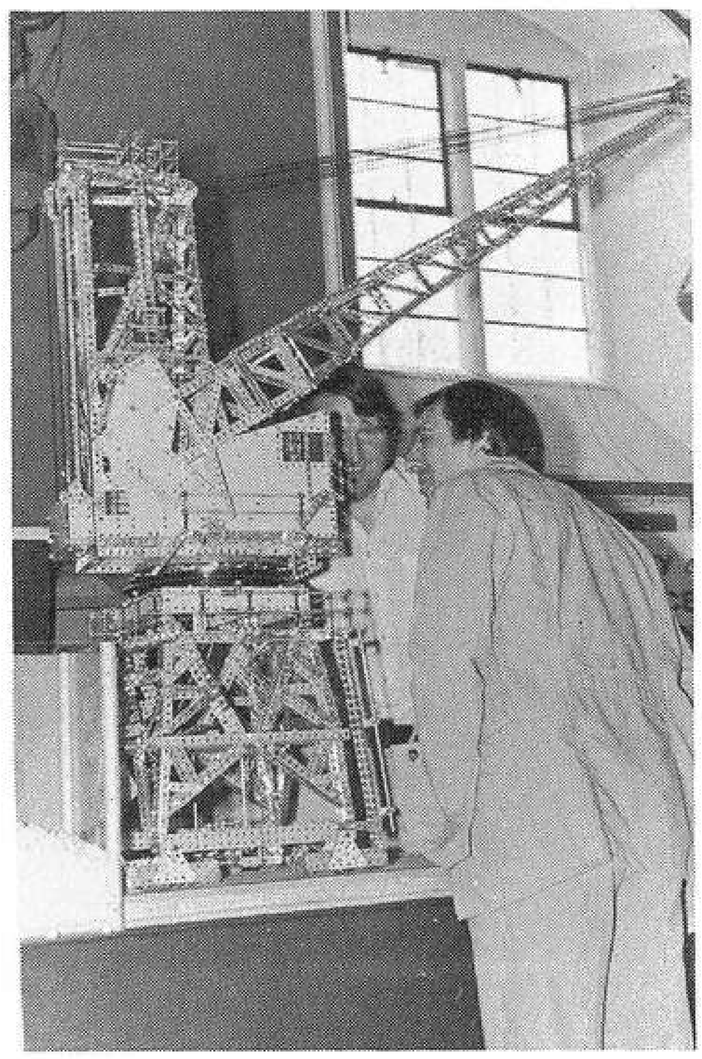




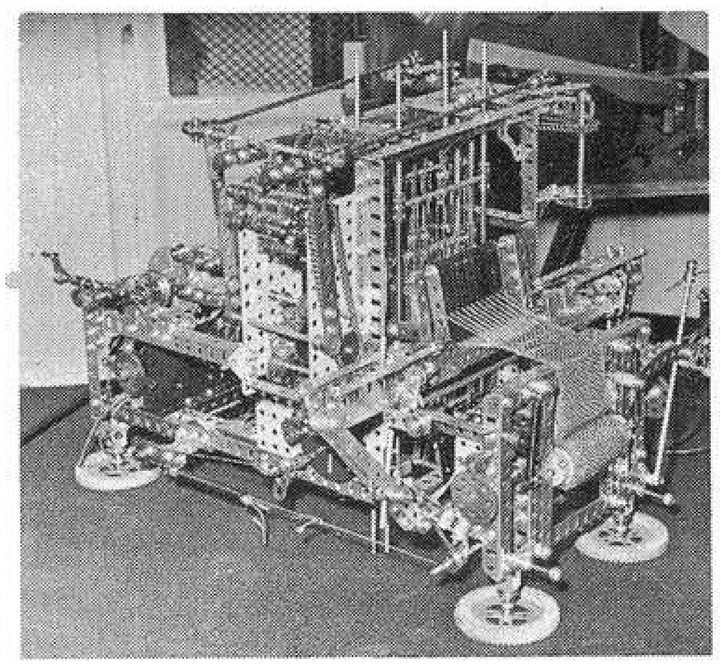
Above, Brian Williams of Southampton built this well-proportioned Showman's Road Locomotive – always a popular attraction. Left top, a neat Leyland Atlantean-type Double-deck Bus built from a No. 10 Set by Roger Wallis of the Midlands M.G. Left lower, a No. 10 Set 4-4-0 Locomotive built by South London M.C. member Stan Bedford.



Above, a particularly impressive model of a mo built by Mike Cotterill of Skegness and actuall provided us with some detailed photographs and include in a future M.M. Below, a view lookin devoted to an excellent display of Meccano produ Kinoulton, Notts. – a particularly appropriate



Left, Eddie Oatley of Edgeware, Middlesex describes an interesting feature of his fully operating 5-ton Level-luffing Grab Crane to Peter Wilson of Westcliffe-on-Sea. Below, a 48-strand Loom built by Tony Knowles of the Holy Trinity M.C. from an original design by Dr. Keith Cameron of the U.S.A. and published as a GMM Supermodel Leaflet.



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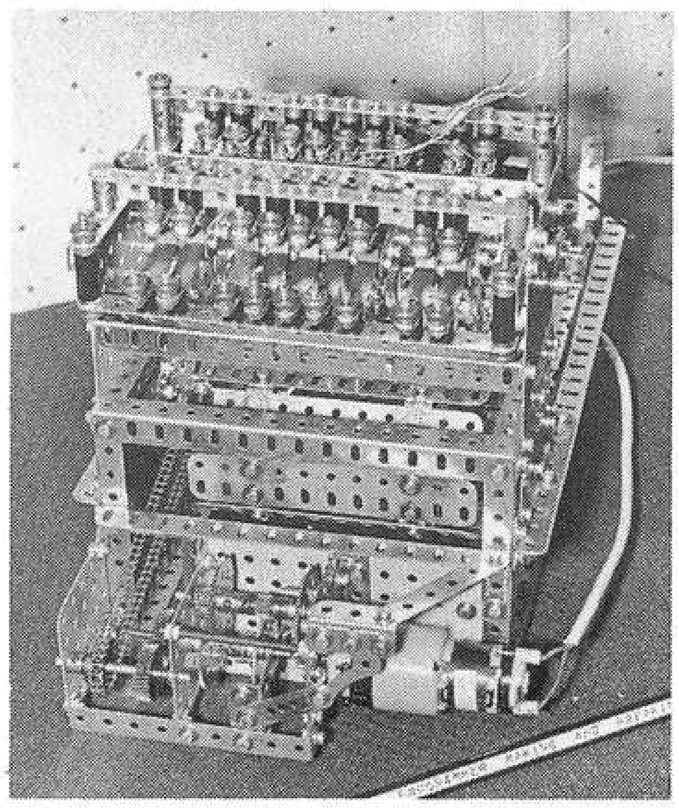
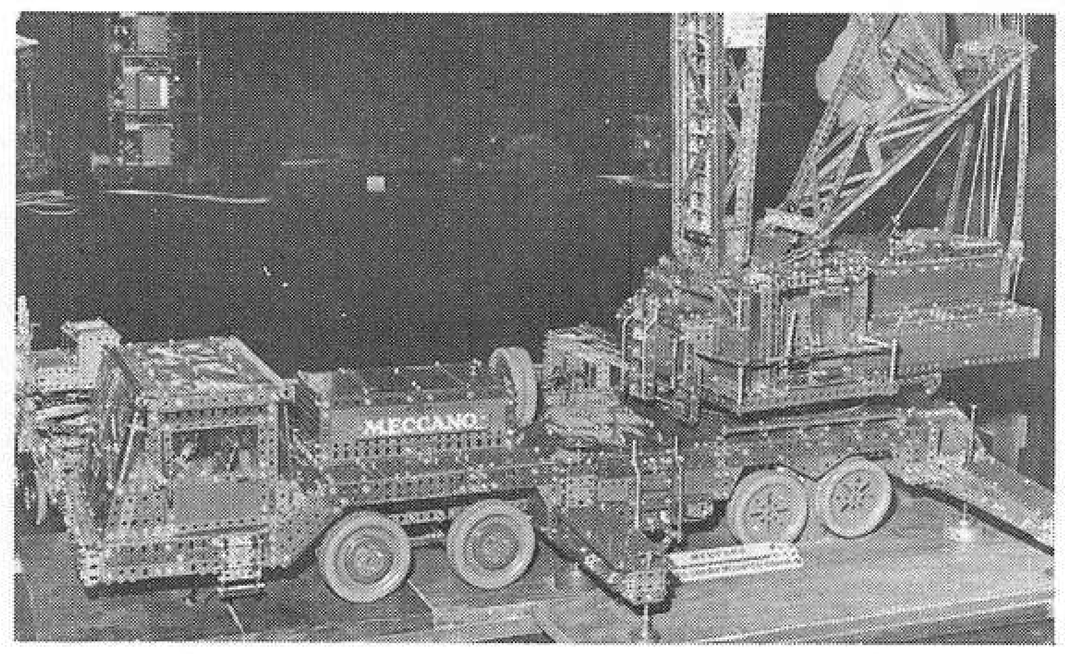
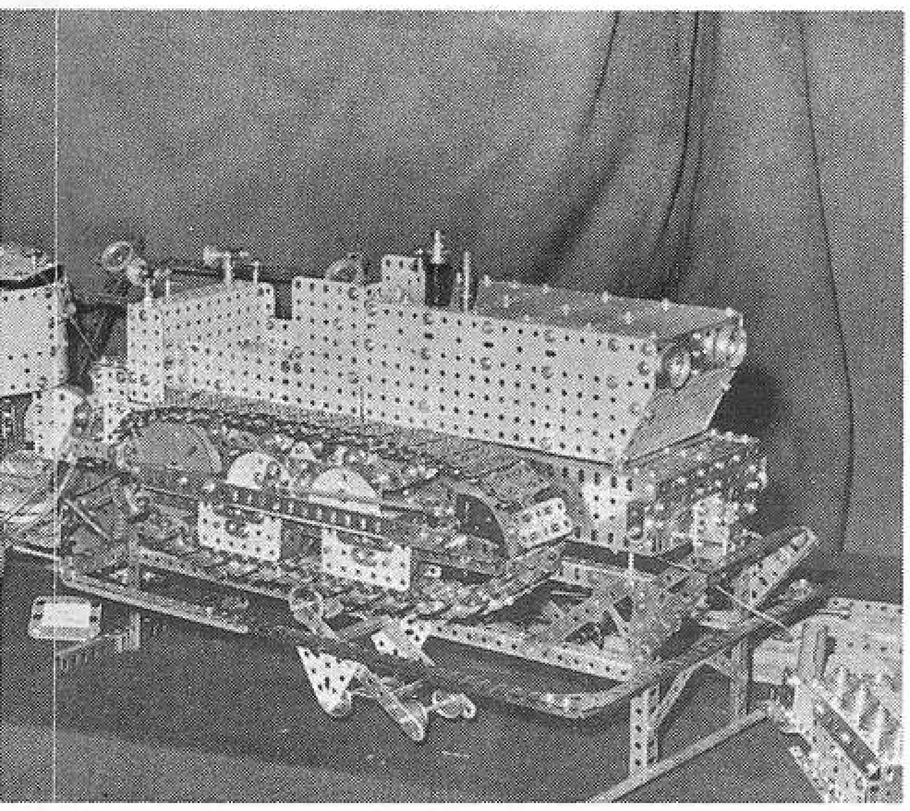
e 5th Annual Meccano Exhib-
on 3rd and 4th, September.



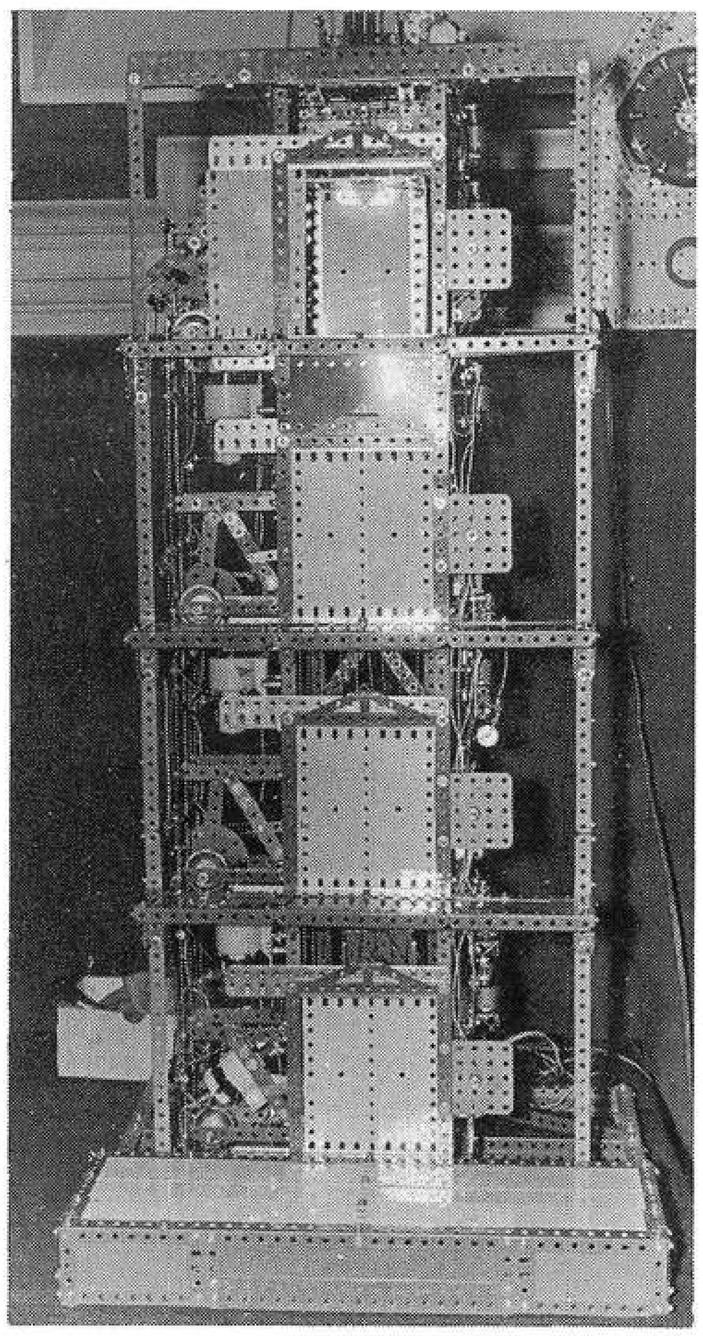


Centrepiece of the Exhibition was an enormous 18ft. high Coles Lorry-mounted Crane built by 16-years-old Ian Henwood of Oxford. It was so high, in fact, we could not photograph it all, but above is a close-up of the highly-detailed cab/chassis assembly.

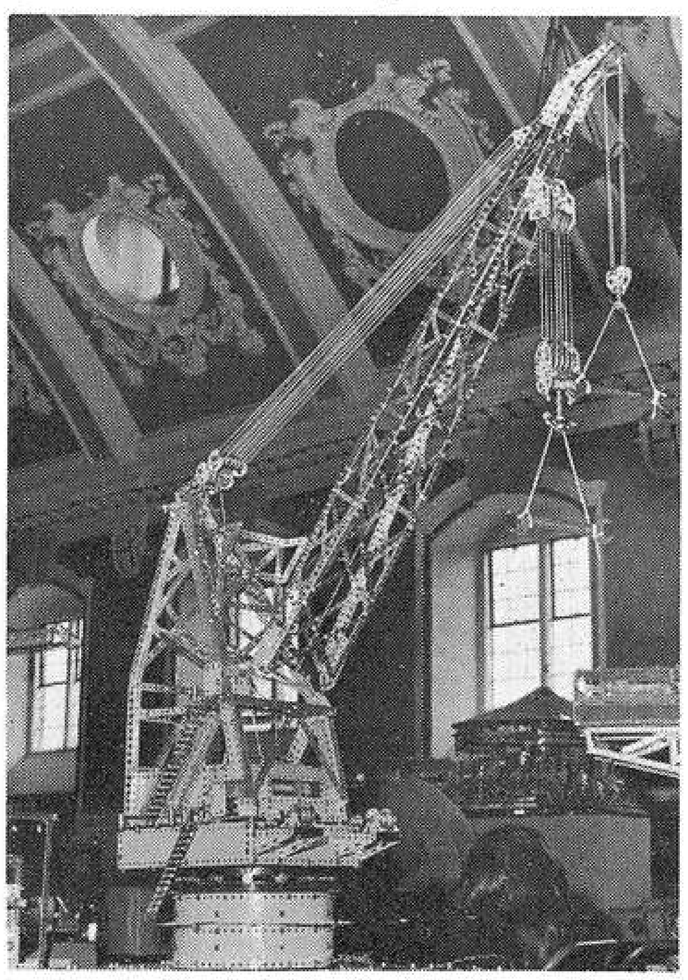


Above, an extremely useful mechanism for automatic display use is this 7-channel programmer designed and built by David Guillaume of Alcester. Right, an impressive 24-horse Circus Roundabout designed and built by Cyril Felstead of High Wycombe.

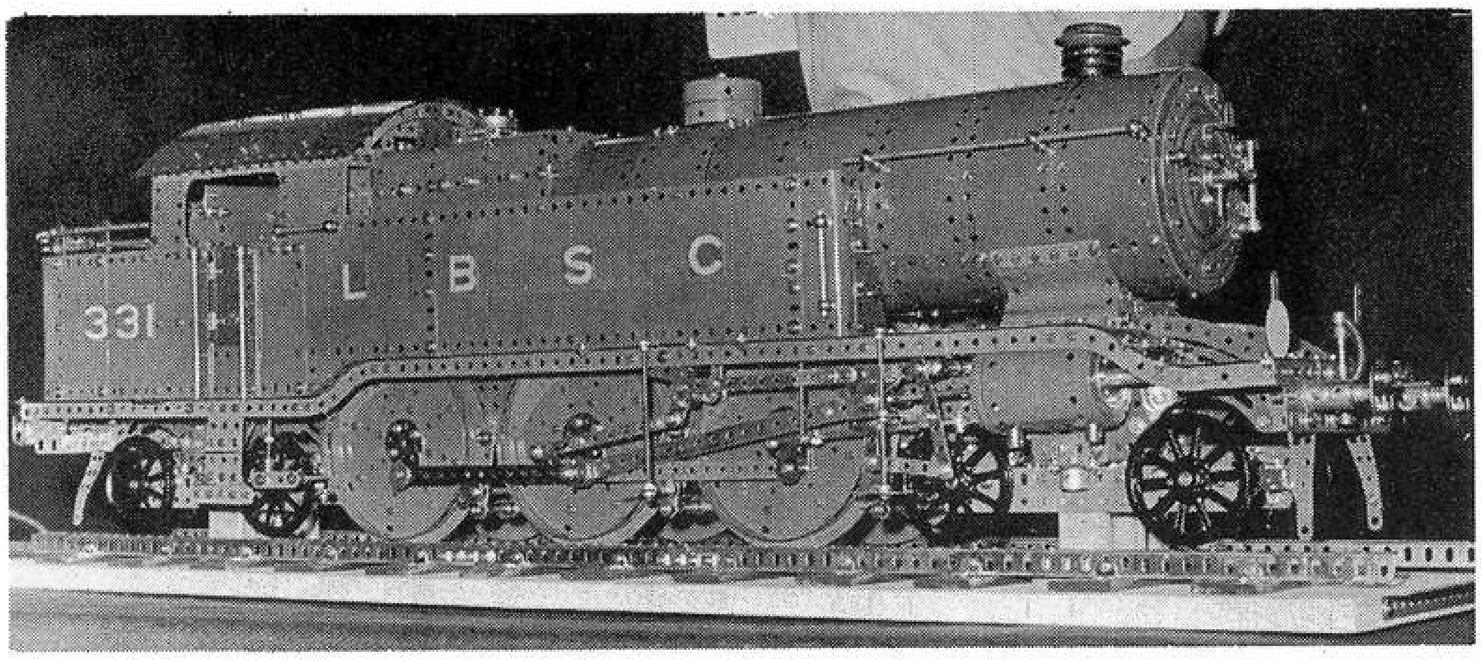
a modern Lifeboat and powerful hauling Tractor
tually based on the Skegness Lifeboat. Mike has
and information on his model which we hope to
ooking at the Stage at the Exhibition which was
roducts over the years, mounted by Jim Gamble of
ate display considering Meccano is 75 this year!



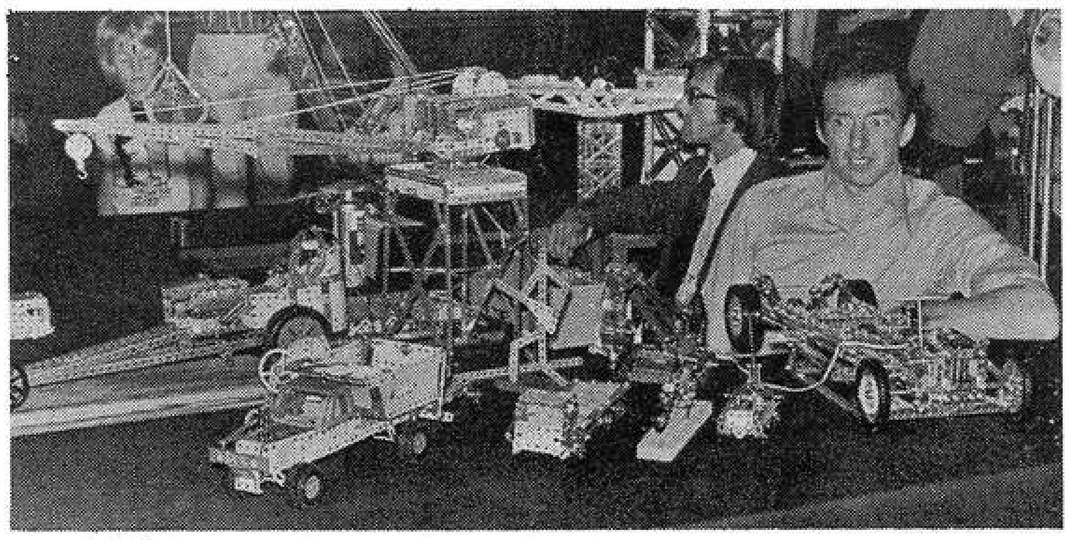
Left, a complex piece of machinery is this fully-working Lift, or Elevator, built by Jack Partridge of Ewelme from the M.W. "Model Plans" publication. The original design was by Dr. Keith Cameron of the U.S.A. Below, a fine model of the 26,000 Ton Floating Crane, "Hercules" built by H. Shaw of Nottingham.



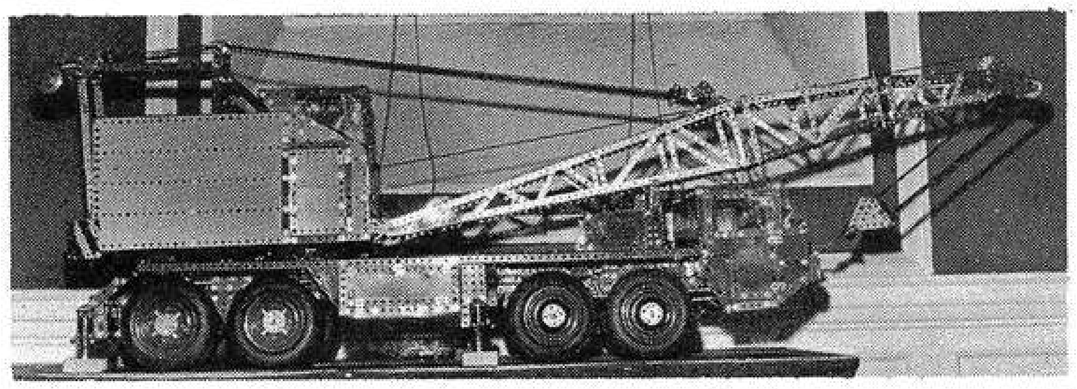
SCENE AT THE HENLEY SHOW...



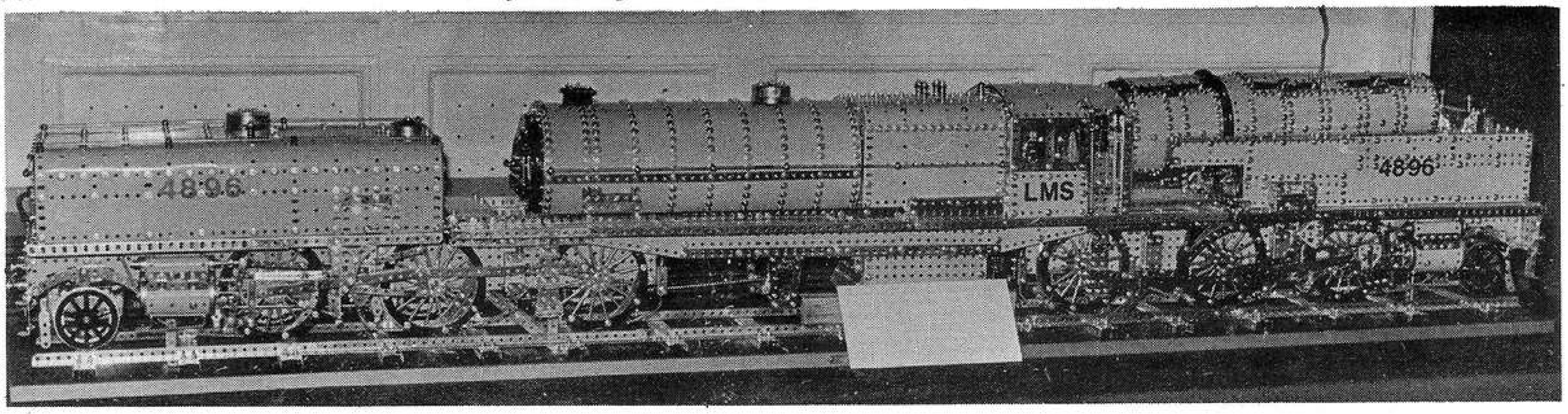
Above, a superbly-proportioned model of a 4-6-4 Class L ("Baltic") Express Tank Locomotive built by Adrian Ashford and based on an original loco once operating on the London, Brighton and South Coast Railway.

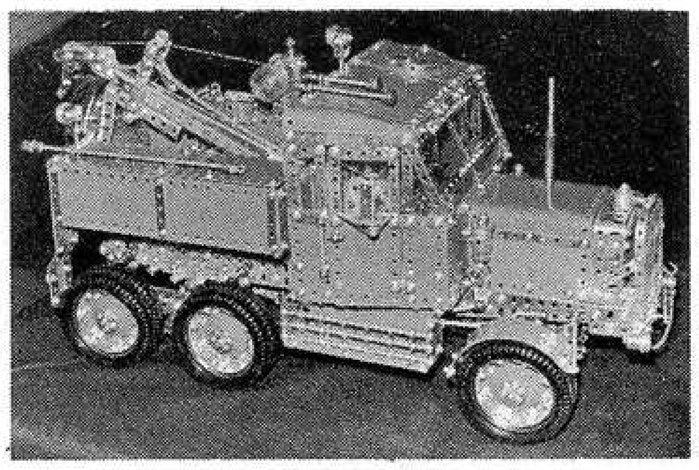


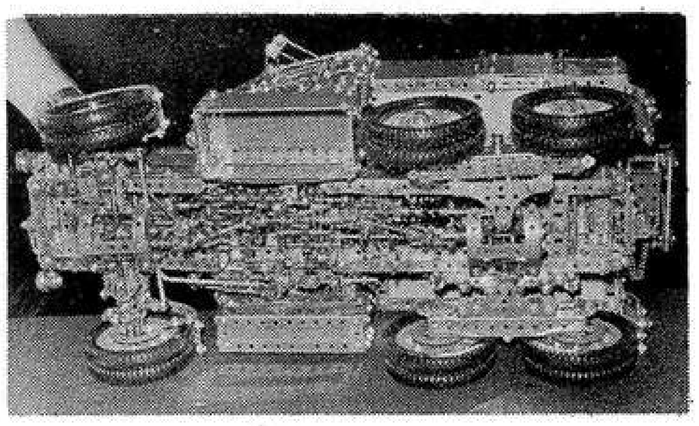
Above, Mr. Terry Pope, founder and Secretary of the recently-formed Wellingborough and District Meccano Club, pictured with some of the Club's exhibits at Henley. All the British-based Clubs were also very-well represented.



Above, this advanced and highly-detailed Lorry-mounted Crane was exhibited as a double memorial: to its builder, the later Mr. Len Wright, and to its original designer, the late Mr. .Eric Taylor.



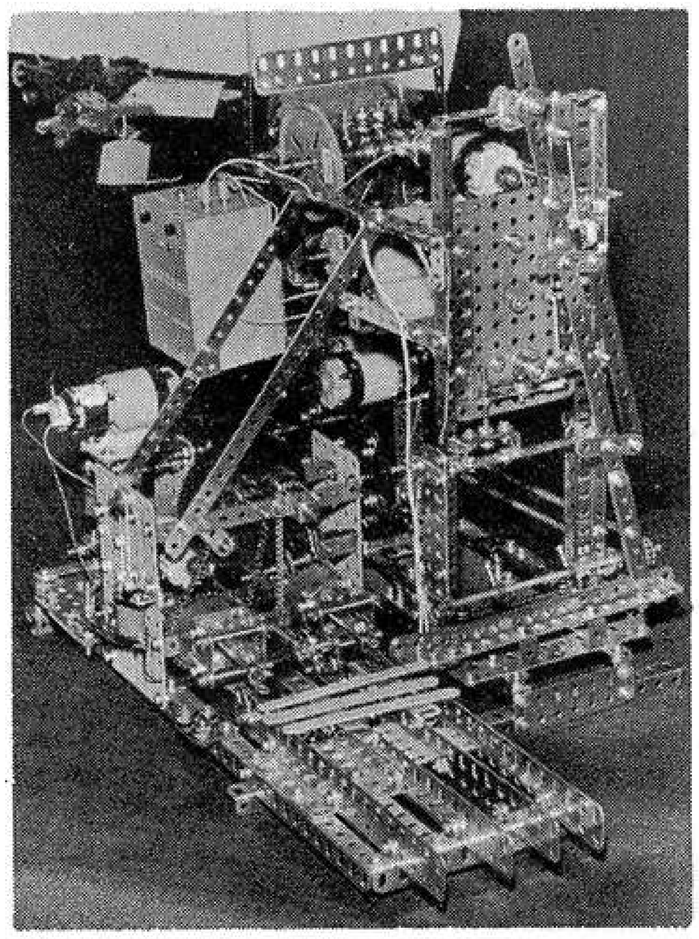




Above, something of a giant exhibit was this magnificently-proportioned and highly detailed model of the unusual 2-6-0, 0-6-2 Beyer Garratt Locomotive built to a scale of 1 in. to 1ft. by Mr. R. Ford of Chalfont St. Peter, Bucks.

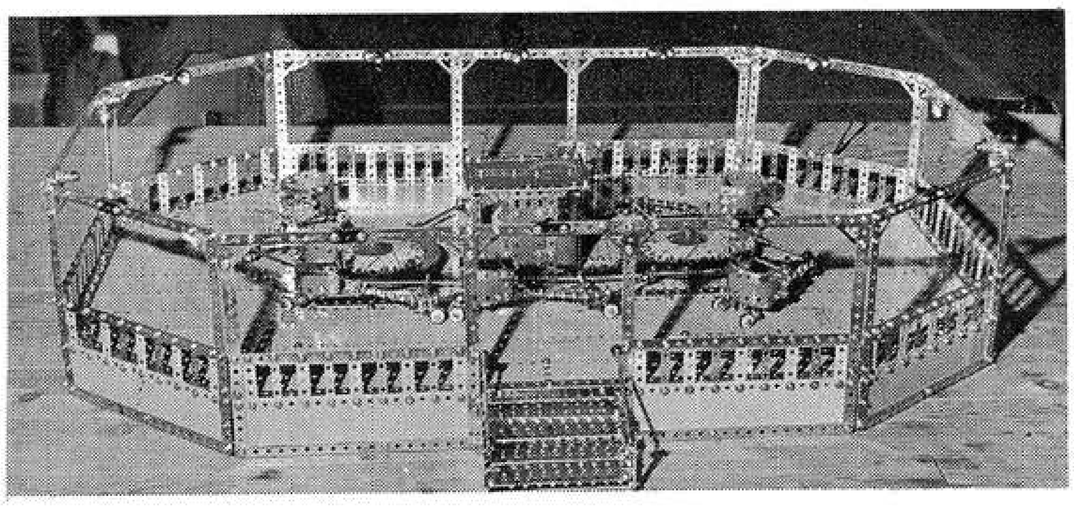
Left top, a model which attracted a great deal of attention at the Show was this 6 x 6 Scammell "Explorer" built by Terry Briggs of Reading. The lower left illustrations, showing the underside of the model, will indicate why. It is packed with 'machinery'!

Right, a totally unusual model was this Fence-building Machine which actually works, producing miniature paling-type fencing from lollipop sticks. It is unusual in that its builder, Bill Roberts of Godalming, designed it himself from scratch.

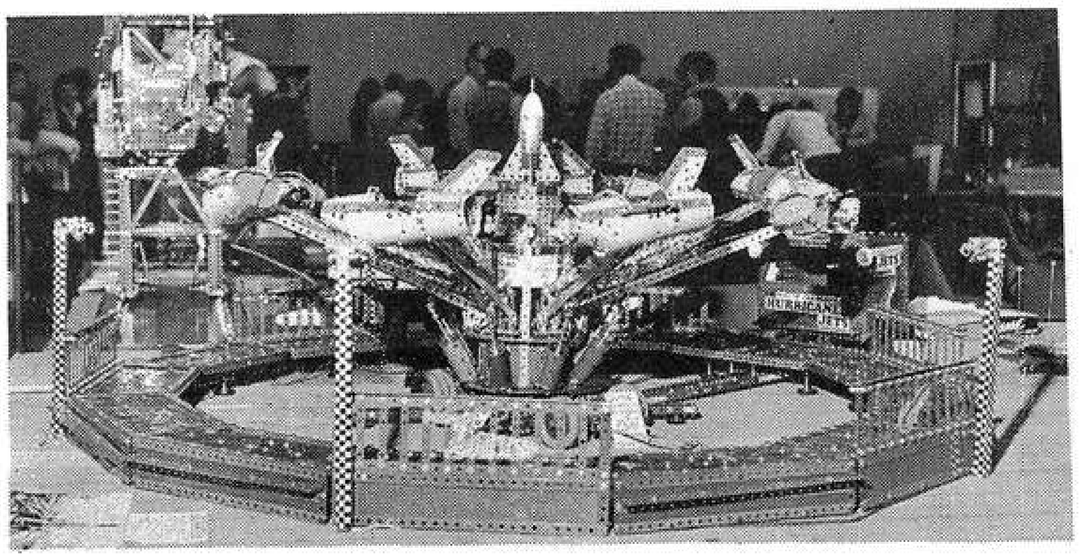


...AND AT STONELEIGH

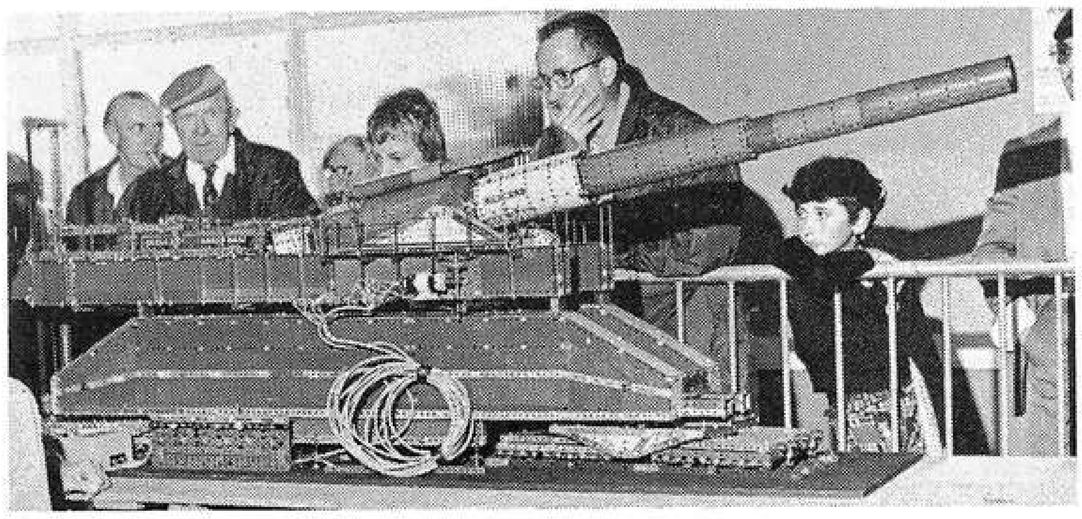
A photo report on the M.M.G. Exhibition at the Town and Country Festival, Stoneleigh, Warwickshire, 28–30 Aug.



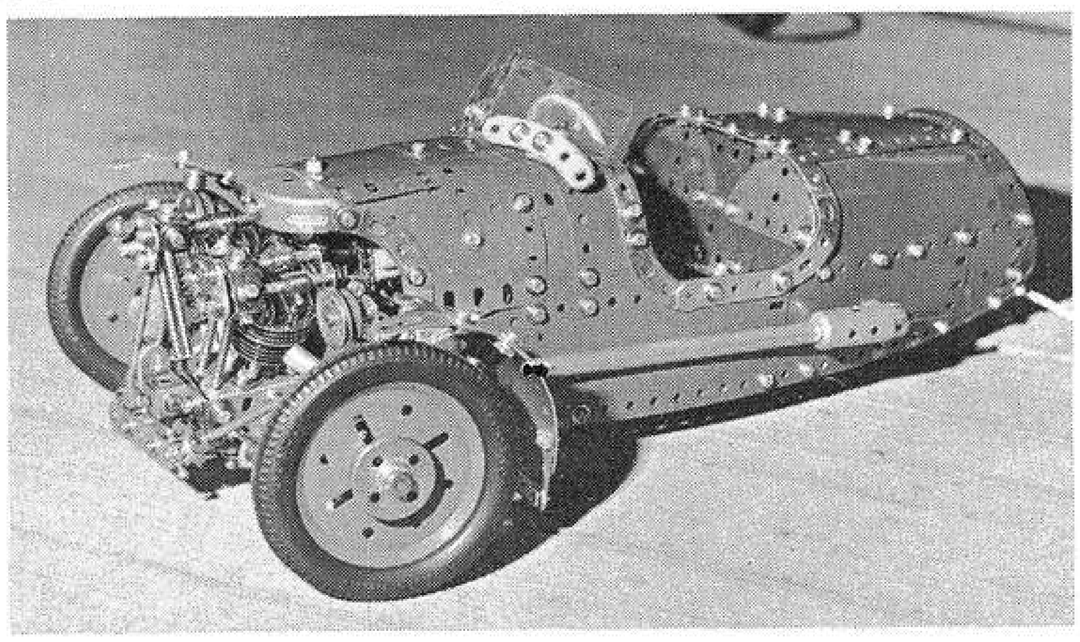
Above, a Raceway (The Whip) built by Keith Orpin of Ablingdom, Oxon. Below, a fully-automated Hurricane Jet model by Nicholas Wright of Coventry, West Midlands.

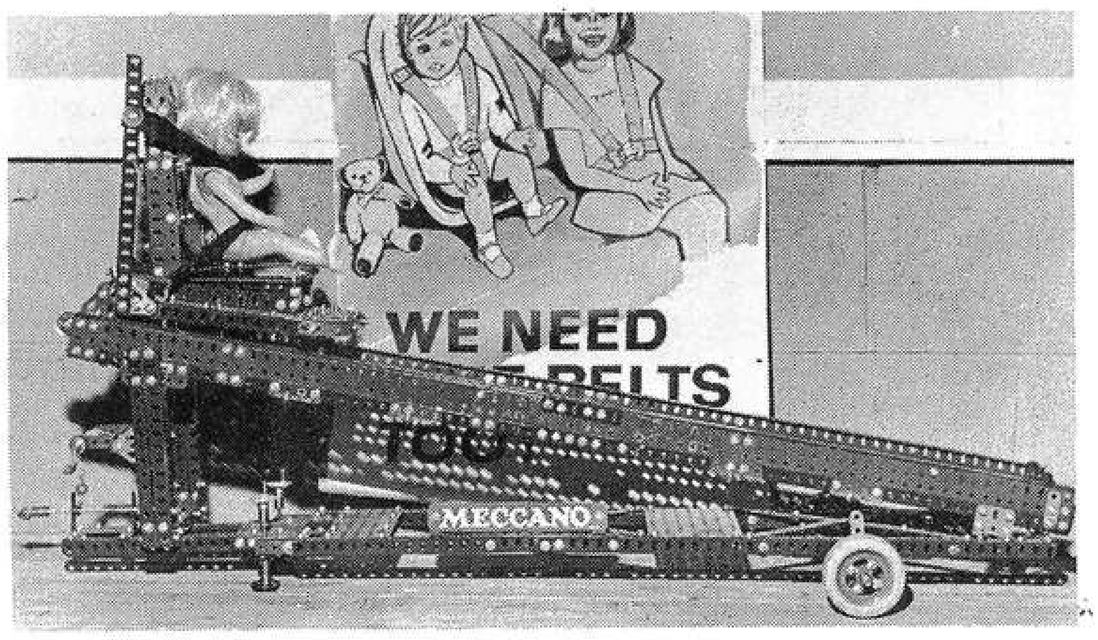


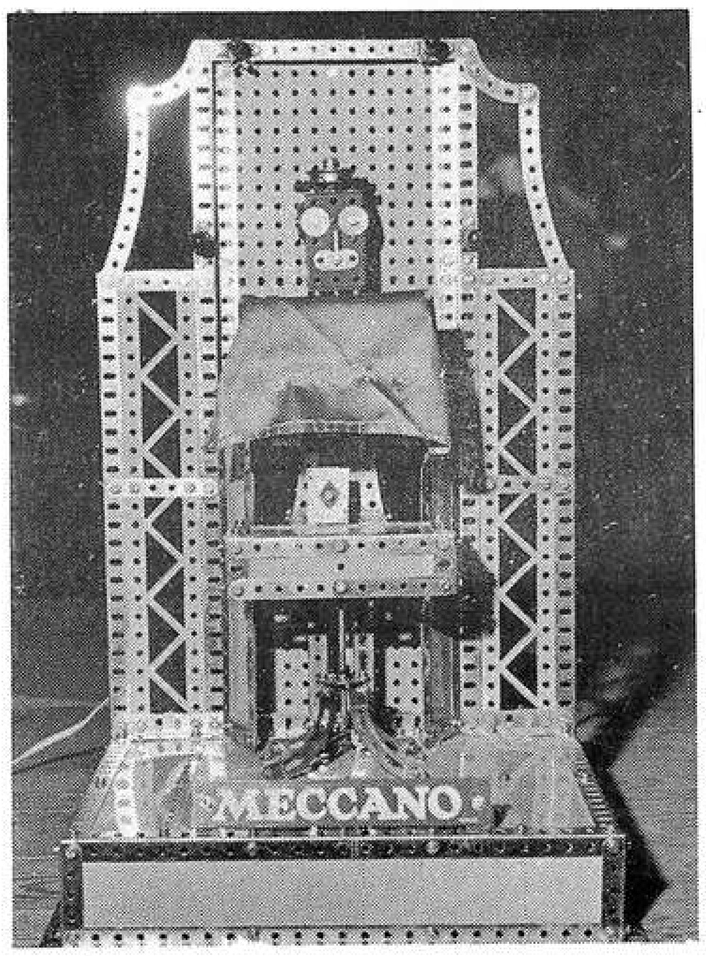
Below, an unusual 3-wheel drive Morgan by Terry Pettitt of Northampton. The model features a realistic engine representation and working mechanics.



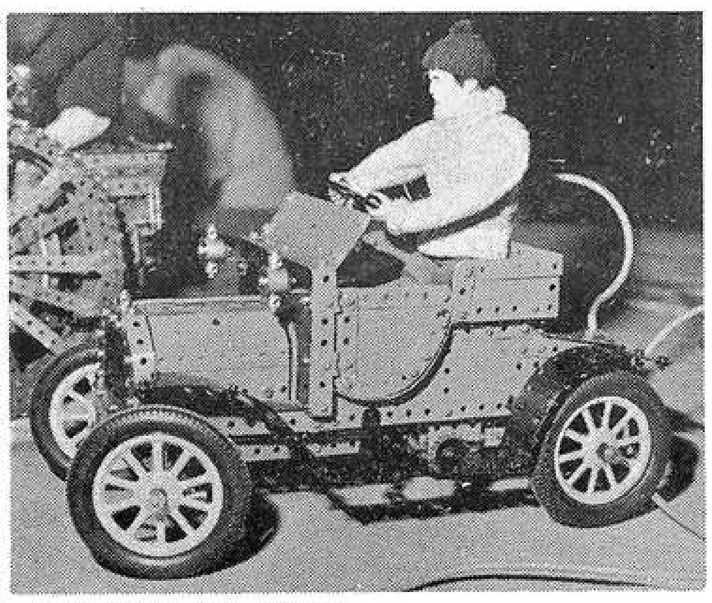
Above, a superb fully-operational 80cm Kanone (E) "Gustav" Gun which took its builder, Tony Homden, 6 months to complete. Below, Ernie Chandler's Seat Belt Sleigh which is based on a real-life demonstration model.

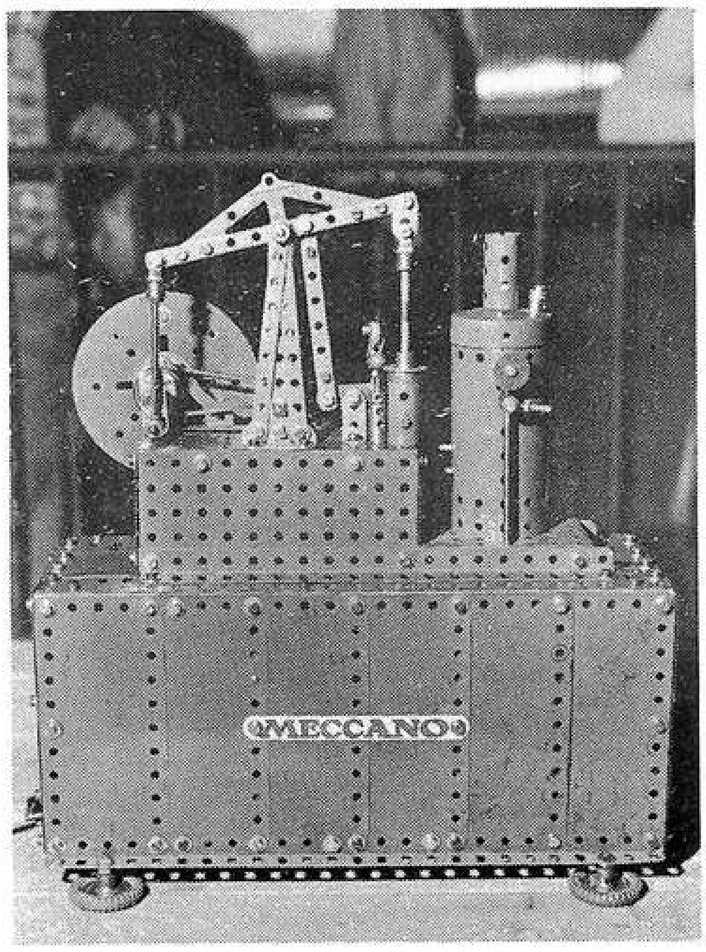






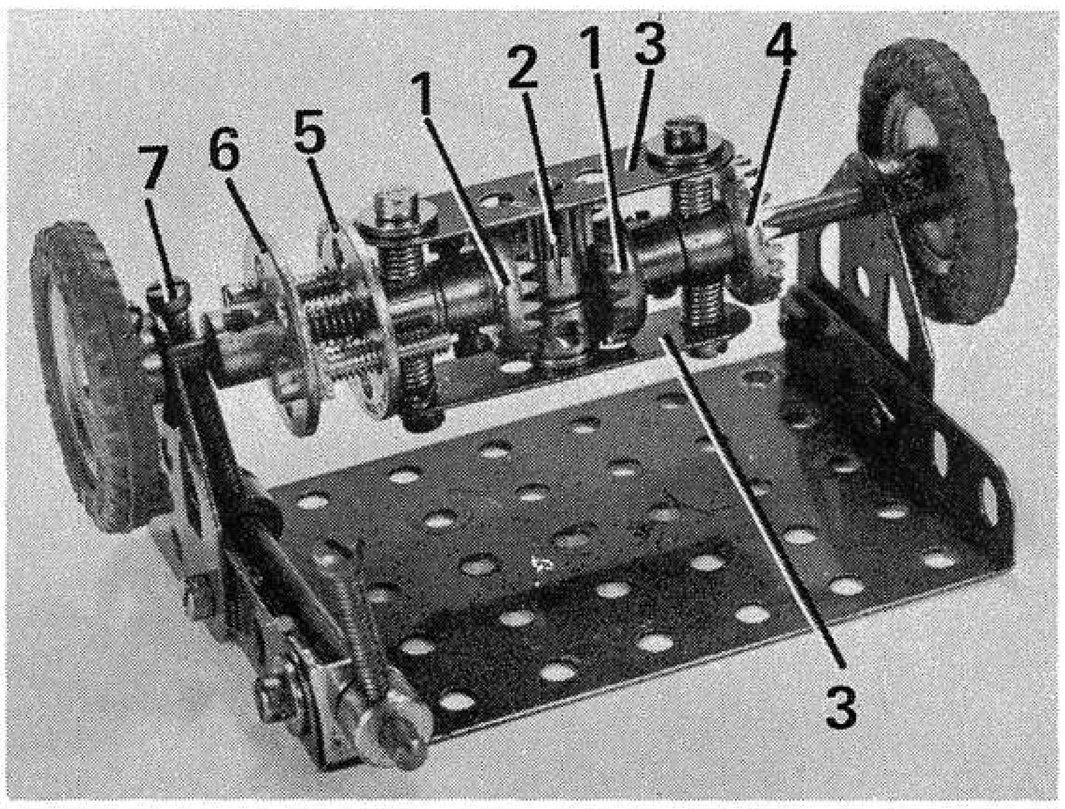
Left, an intriguing "Magic Conjurer" designed and built by Roger Wallis of Solihull, Warwickshire. The playing card disappears! Below, a neat 1904 Brushmobile by Dennis Perkins of Rugby, Warwickshire. Right, a Beam Engine by D. Goodman, Treasurer of the Midlands M.G.





AMONG THE MODEL BUILDERS

with "Spanner"



A Lockable Differential by Mr. James Grady of Dundee.

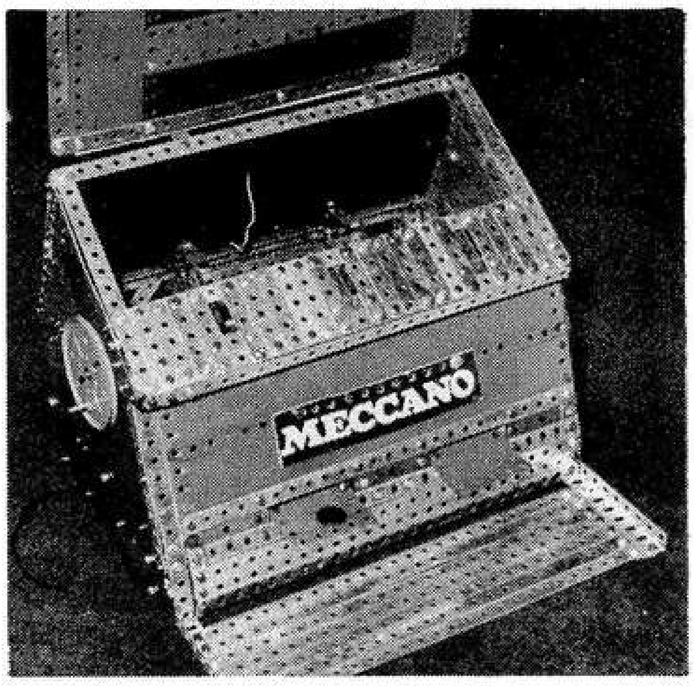
JAMES GRADY, of Dundee – that champion of the small-scale vehicle-building fraternity – has not been idle since his last offering appeared in these pages. He has been investigating the possibilities of lockable differentials in Meccano and he has, in fact, come up with no less than three different versions of this type of mechanism. Unfortunately, lack of space prevents me from featuring all three of his units here, but I have chosen the one accompanying example particularly because it not only works well, and positively, but it is also suitable for models using 1" Pulleys and Tyres as road wheels.

Before describing the mechanism, I feel a word of explanation about the value of a lockable differential, in real life, is in order. Such units are ideal for vehicles which, for instance, regularly work on muddy ground. With a standard differential, if a wheel became stuck in the mud, the differential would come into play and the drive would be transferred to the "free" wheel and this might well cause the vehicle to slew around in the mud. However, if the differential were locked to keep an equal drive to both wheels, then the vehicle would stand a much better chance of being able to follow its desired path reasonably accurately!

For demonstration purposes, Mr. Grady's unit is mounted in two Flat Trunnions bolted to a 3½" x 2½" Flanged Plate, but in operation, the mounting would of course depend upon the parent model. Each half-shaft consists of a 2" Rod, on the inner end of which a ¾" Contrate Wheel 1 is fixed, one by ordinary Grub Screws, and the other by two Keyway Bolts (Set Screws might also suffice). The Contrate Wheels mesh with a 7/16" Pinion 2 loose on a 1" Rod held by a Collar in the centre holes of two of the latest-style 2" Strips 3. Note that two spacing Washers are carried, one each side of the Collar. The half-shafts rotate freely, one in another ¾" Contrate Wheel 4, and the other in an electrical 1" Bush Wheel 5, the Bush Wheel being spaced from nearby Contrate 1 by a Washer. The outer ends of Strips 3 are attached to the bosses of the Bush Wheel and Contrate 4 by the 3/8" Bolts, being spaced from them by a Cord Anchoring Spring on the shank of each Bolt, and note that each Bolt also carries a Washer between the Bolt head and the Strip to ensure that the Bolts do not foul the half-shafts.

A Compression Spring is slipped on to the half-shaft carrying Bush Wheels 5 followed by another, free, electrical 1" Bush Wheel 6, in two opposite holes in the face of which two inward-pointing ¾" Bolts are fixed by Nuts. The shanks of these Bolts project into the corresponding holes in the face of Bush Wheel 5, as shown, but the action of the Compression Spring normally keeps them clear of the Keyway Bolts in Contrate 1. However, if Bush Wheel 6 is pushed inwards on the Rod, the shanks of the ¾" Bolts make contact with the heads of the Keyway Bolts, thus effectively locking the Differential. In Mr. Grady's demonstration unit, movement of Bush Wheel 6 is controlled by a 1-1/8" Bolt 7 screwed into one transverse bore of a Collar on a Rod journalled in two Angle Brackets (bolted to one side flange of the 3½" x 2½" Flanged Plate). Another Collar on the end of the Rod is fitted with a ¾" Bolt which serves as the operating handle for the locking mechanism. In operation, of course, drive to the Differential is taken to Contrate 4.

Although some readers may regard a 'gaming machine' as a doubtful subject for MMQ, "Spanner" was impressed with this Roll-a-Penny Machine by Richard Mahomed of Kenilworth, Warks.



PARTS REQUIRED
(For demonstration unit illustrated)

2- 6	3-29	3-59	2-126a
2-12	5-37b	3-111	2-142c
1-16b	7-37c	4-111c	4-176
2-17	7-38	1-111d	2-231
2-22	1-53	1-120b	2-518
1-26c			

"ROLL-A-PENNY" MACHINE

Some people may frown on me for mentioning something so controversial as gambling in the MMQ, but I cannot deny the fact that I was rather impressed with the "Roll-A-Penny" Machine featured in the accompanying illustration, and designed and built by Richard Mahomed of Kenilworth, Warwickshire, who was only 15 at the time it was built. Inspired by one of those machines

which are often found in amusement arcades, there is no doubt that it can provide a lot of enjoyment for young and old alike. I leave the description of its operation to Richard, himself, who writes:

"The coin is inserted in to one of three slots which can be aimed, as desired, by turning the 3" Pulley at the side of the machine. A Motor-with-Gearbox, in constant motion, is geared down in such a way as to cause a "wall" to move backwards and forwards. This pushes the coins which, if placed well, will push other coins previously inserted towards the front of the machine and down the chutes for winnings. However, not all the coins which reach the front are provided as winnings, as some fall into the collection drawer positioned beneath the chutes.

"To aid photography, a clear plastic front has been removed, this normally covering the large open hole above the slots. Just behind this is fitted a light with a dark shade to avoid any glare, for often it is too dark to see properly inside the model."

I can well understand that it is desirable to see inside when "playing" the machine, as seeing what is happening to your money would greatly add to the excitement! Gambling machine or not, I make no excuses for including Richard's model in the magazine as I feel it will be of interest to many readers – particularly those club members who mount displays in aid of local charities. Perhaps it might make a good money-raiser!

DOG CLUTCH

Returning to mechanism matters, now, earlier this year I received an interesting letter from Martin Risley of Wheathampstead, Herts. "Whilst pottering over my Meccano," said Martin, "I noticed, quite by chance, that when the ¾" Sprocket Wheel (No. 96a) was placed face-on to the Multi-purpose Gear (No. 27f) the teeth lined up exactly. I do not know whether it was intended in the design of the Multi-purpose Gear *(I don't think it was! – Spanner),* but it spurred me on to design a neat little dog clutch, shown in the accompanying illustration.

"The groove running around the outside of the Multi-purpose Gear is put to good use as this can be used to disengage the two halves of the clutch by means of an Angle Bracket attached to a suitable control linkage. Note that the driving axle protrudes part-way into the boss of the Multi-purpose Gear as this makes sure that the two halves line up exactly. Because the Multi-purpose Gear is of a plastic material, "gear crashing" noise and wear is not excessive" concluded Martin.

The mechanism featured in the accompanying illustration is one which we have built up from a sketch which Martin supplied of his original unit. Tightly fixed to the boss of the Multi-purpose Gear 1 are two Fish-plates 2, the securing Bolts passing through the circular holes in the Fishplates. Note that each securing Bolt is first fitted with a Nut to ensure that the shank of the Bolt does not foul the centre bore of the Gear boss as the Gear must be free to slide on the input shaft. As Martin mentioned, the input shaft is inserted only part-way in to the boss of the Gear; a Compression Spring is added to the shaft, then a Short Coupling 3 is secured on the shaft by two standard Bolts which pass through the slotted holes in Fishplates 2. The Slots in the Fishplates, of course, permit movement of the clutch plate provided by the Multi-purpose Gear.

With the Multi-purpose Gear in its maximum extended position, the output shaft, fitted with the ¾" Sprocket Wheel 4, is inserted in the remaining part of the Gear's boss, then the Sprocket Wheel is located against the face of the Gear and locked on the output shaft. Provided both the input and output shafts are prevented from sliding in their bearings, the action of the Compression Spring between Multi-purpose Gear 1 and Short Coupling 3 keeps the Gear and Sprocket in mesh, but the clutch can be disengaged by simply sliding the Multi-purpose Gear back along its shaft as permitted by the slots in Fishplates 2.

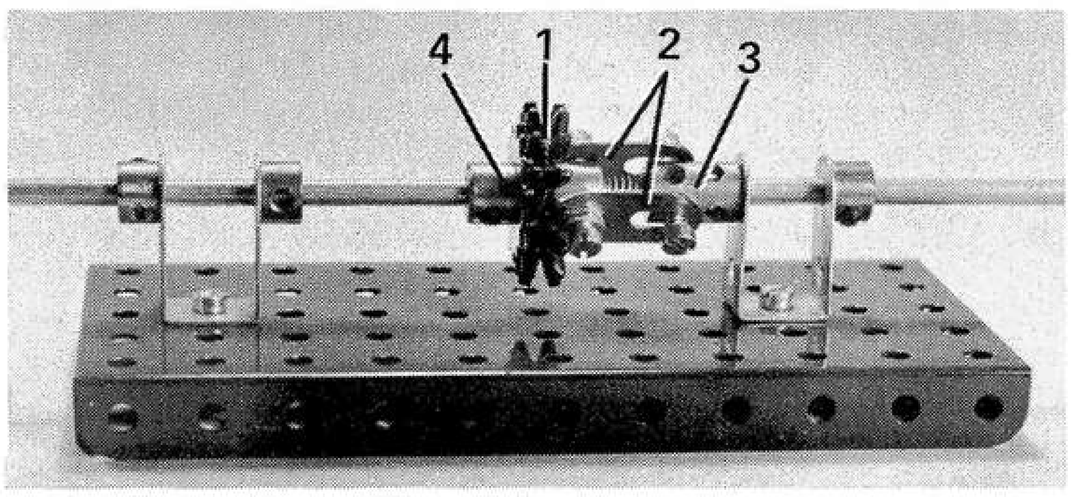
The following parts list applies to the clutch unit only, and not to the input and output shafts or the demonstration mounting.

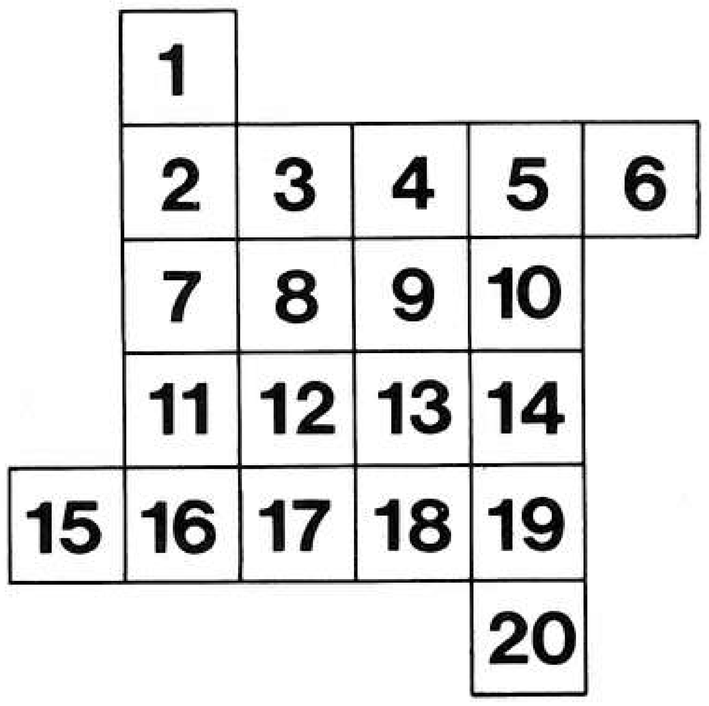
PARTS REQUIRED

2-10	4-37b	3-59	1-96
1-27f	2-37c	1-63d	120b

A simple Dog Clutch assembly designed by Martin Risley of Wheathampstead, Herts.

The basic mechanism is illustrated; in operation a control linkage would need to be included.





PUZZLE IT OUT

Judging by reader reaction, Dennis Higginson's "Brain Teaser" featured in the last MMQ was pretty-well received. Dennis – Secretary of the Stevenage M.C. – has therefore provided us with another puzzle which I think provides quite a challenge, so you might like to use it to while away a bit of time in between your constructional work. You require four sets each of five different components and, although you do not necessarily need Meccano parts, as this is the MMQ we recommend that you use 4 of part No. 35, 4 of part No. 37a, 4 of part No. 37b, 4 of part No. 37c (Hexagonal Nut) and 4 of part No. 38.

What you have to do is prepare a sheet of paper or a "board" with 20 squares laid out in the formation shown in the illustration above. Then place all five groups of parts on this board, one part to each square, in such a way that no line contains more than one of the same part and that no two parts of the same type are in an adjoining square in *any* direction. I assure you it can be done, but, if it should beat you, turn to page 125 of this issue where you will find the answer!

* * *

In signing off I must stress that "Among the Model-builders" will continue, so please keep your contributions flowing in to our new Editorial Offices in Henley. Everything will be considered!

Meccano Revolving Crane

ALTHOUGH INCLUDED in the popular series of pre-war Meccano Super Model Leaflets, the Meccano Revolving Crane was featured quite early in the 1920's and was a very popular model at that time. Because it is of comparatively simple form, it provides a "Past Master" which younger enthusiasts with modest Meccano outfits can build, despite an obsolete Octagonal Coupling being used in the original. This can be simply replaced with a current Coupling. If the double bracing of the early pattern Braced Girder is required, then two modern 5½" units should be used on each side, one being reversed upon the other.

SPECIAL FEATURES

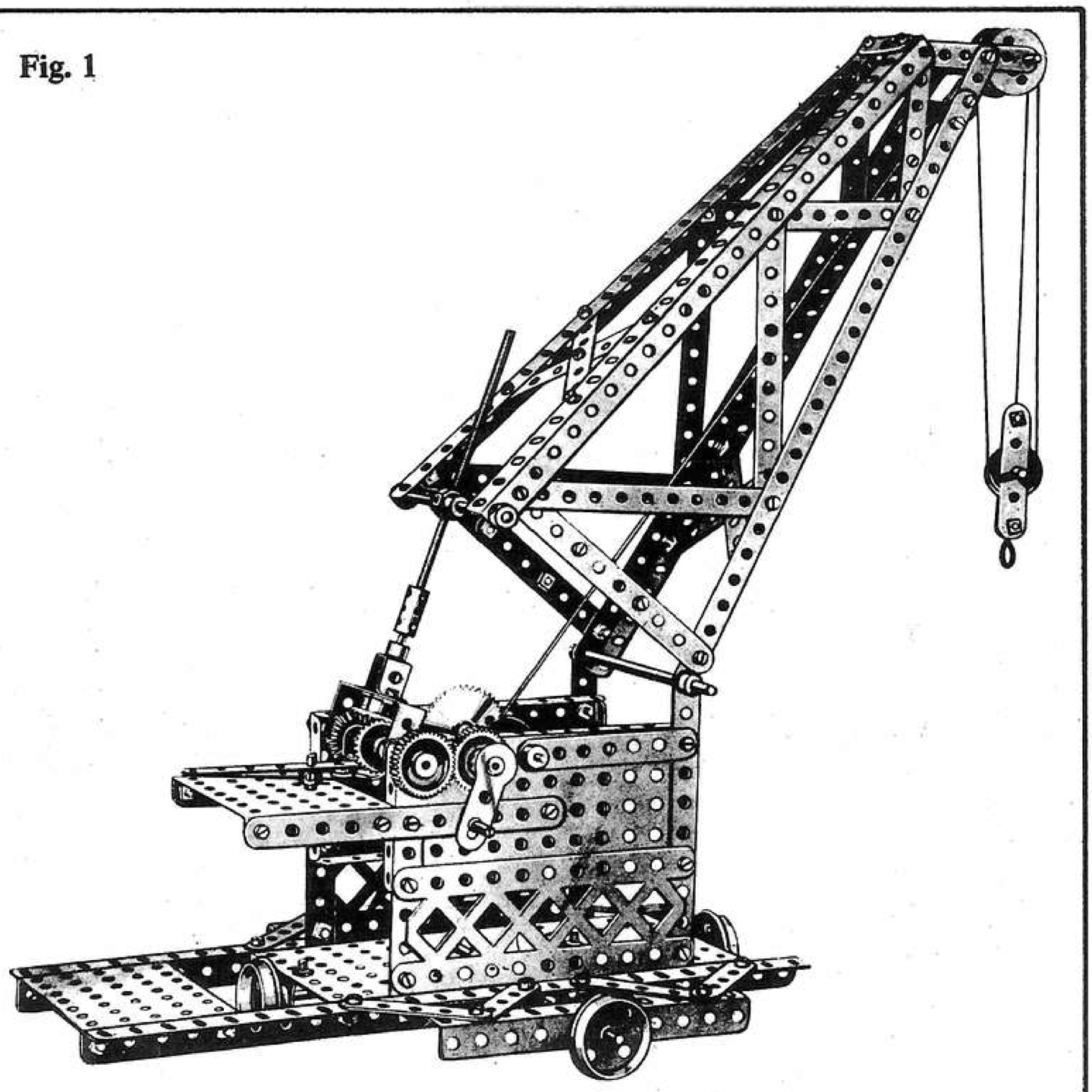
Luffing is effected by means of a simple, but powerful screw gear. Luffing and hoisting movements are controlled by separate levers and may be operated separately or simultaneously. A reversing motion is fitted to the luffing gear and the whole structure is capable of revolving upon the wheels mounted in the base.

Simplicity is the principal virtue of this old Meccano Super Model as it is completely hand-driven, but incorporates sufficient advanced gearing to whet the appetite of the young modeller, nor should he be put off by the large Flanged Wheels or extensive Bevel Gears and 1" Gears, as these can be substituted for more common components. The Flanged Wheels can be replaced by 1" Pulleys with Tyres and the current Multi-purpose Gear can directly replace the 1" Gears and Bevels shown in the building instructions. In the spirit of previous "Past Masters" however, we are following the original Super Model Leaflet instructions, with suitable editing where required.

CONSTRUCTION

Beginning construction with the base platform, which is mounted on Flanged Wheels 19, this is formed by bolting three 3½" x 2½" Flanged Plates 21 between two 12½" Angle Girders 28. Before the Plates are finally secured, however, two 5½" Strips 29 and two 3½" Strips should be bolted in a vertical position ready to hold the sides of the gearbox. The "outrigger" arrangements carrying 4½" Rods 19a are made up from pairs of 2½" Strips bolted to Angle Girders 20a and two 5½" Angle

Fig. 1



Above, a general view of the Meccano Revolving Crane originally featured in S.M.L. 18. Top right, a front view of Crane showing hoisting mechanism, etc.

"Past Masters" 9

An Old Favourite for Young Builders

CONDENSED FROM S.M.L. 18

Girders 23. The Rods are passed through the centre holes of Girders 23 and through Girders 28, where they are held in position by Collars secured to their inner ends against the inner sides of Girders 20a. The outer ends of the Rods carry the Flanged Wheels 19.

Now bolted to the centre of two Flanged Plates 21 is a 2½" x ½" Double Angle Strip, in the lugs of which Rods 19b are journalled. These carry further Flanged Wheels 19 on their outer ends and are also held in place by Collars on their inner ends.

Turning to the supporting frame for the operating mechanism, the method of construction should be fairly clear from figs. 3 and 4. The 5½" Braced Girders shown in Fig. 1. are bolted to the 5½" vertical Strips 2a and to vertical 3½" Strips, to which are also bolted two 5½" x 2½" Flanged Plates which form the sides of the gearbox. Two 5½" Strips should next be bolted to the Flanged Plates, as shown in Fig. 1, so that they overhang the latter at the rear by five holes. These Strips carry a 3½" x 2½" Flanged Plate which supports pivot 5 of the lever 7 (fig. 4).

JIB

The jib is formed by 12½" Angle Girders braced at the sides by 5½" and 3½" Strips as shown in fig. 1. The upper and lower sides of the jib are braced by 3½" Strips placed crosswise and the Girders are spanned at the top by 1½" Strips. Attached to the upper ends of the Angle Girders forming the underside of the jib are extension pieces consisting of 2" Strips, the outer ends of which are attached to the 3" Strips carrying the two jib Pulleys and the Pulley Rod. When completed, the jib may be attached to the travelling carriage by means of a Rod 2 (fig. 4). The manner of passing the Rod through the jib end and the vertical Strips 2a is clearly indicated in fig. 4. Collars are slipped over the Rod and secured at either end, thus holding the jib securely, yet loosely pivotted into position.

Fig. 3

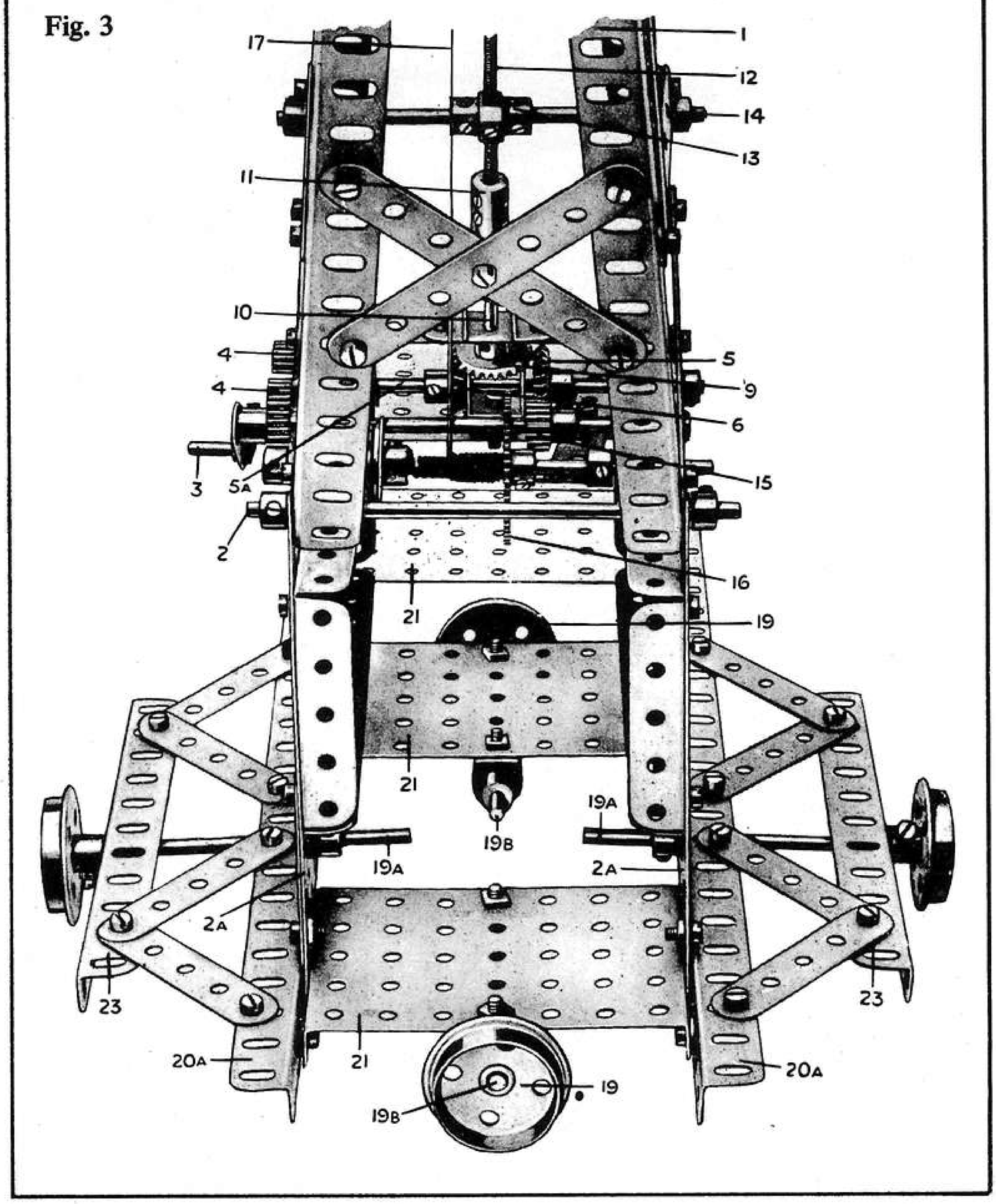
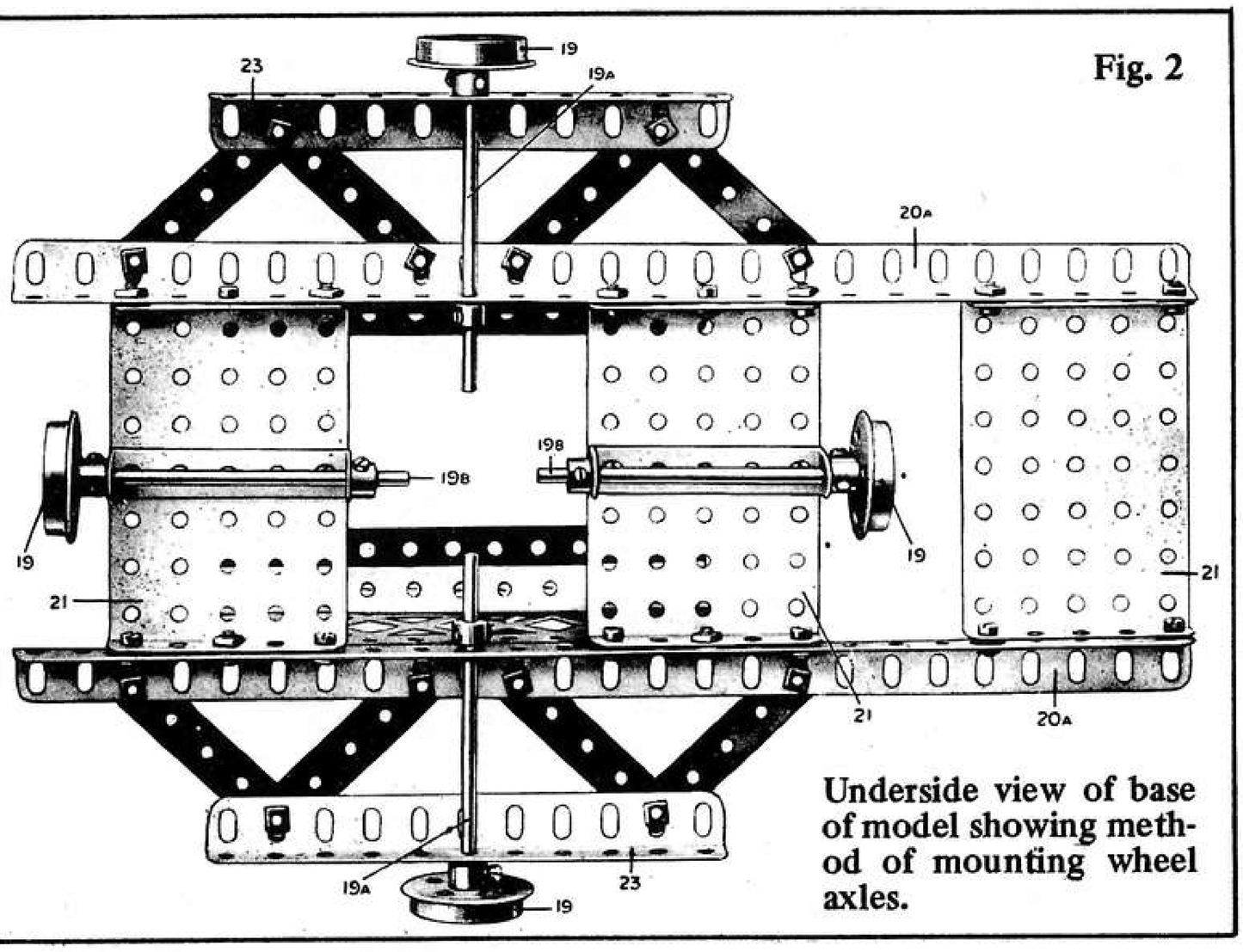


Fig. 2



Underside view of base of model showing method of mounting wheel axles.

LUFFING GEAR

Movement of the jib 1 (fig. 3) about the pivot formed by Rod 2 is obtained from the handle 3 which is secured to a 4½" Rod carrying the 1" Gear Wheel 4 that engages with another 1" Gear Wheel 4 carried on the 4½" Rod 5a. Also carried on Rod 5a are two Bevel Wheels 5 and 6. (fig. 4), either of which may be brought into engagement with Bevel →

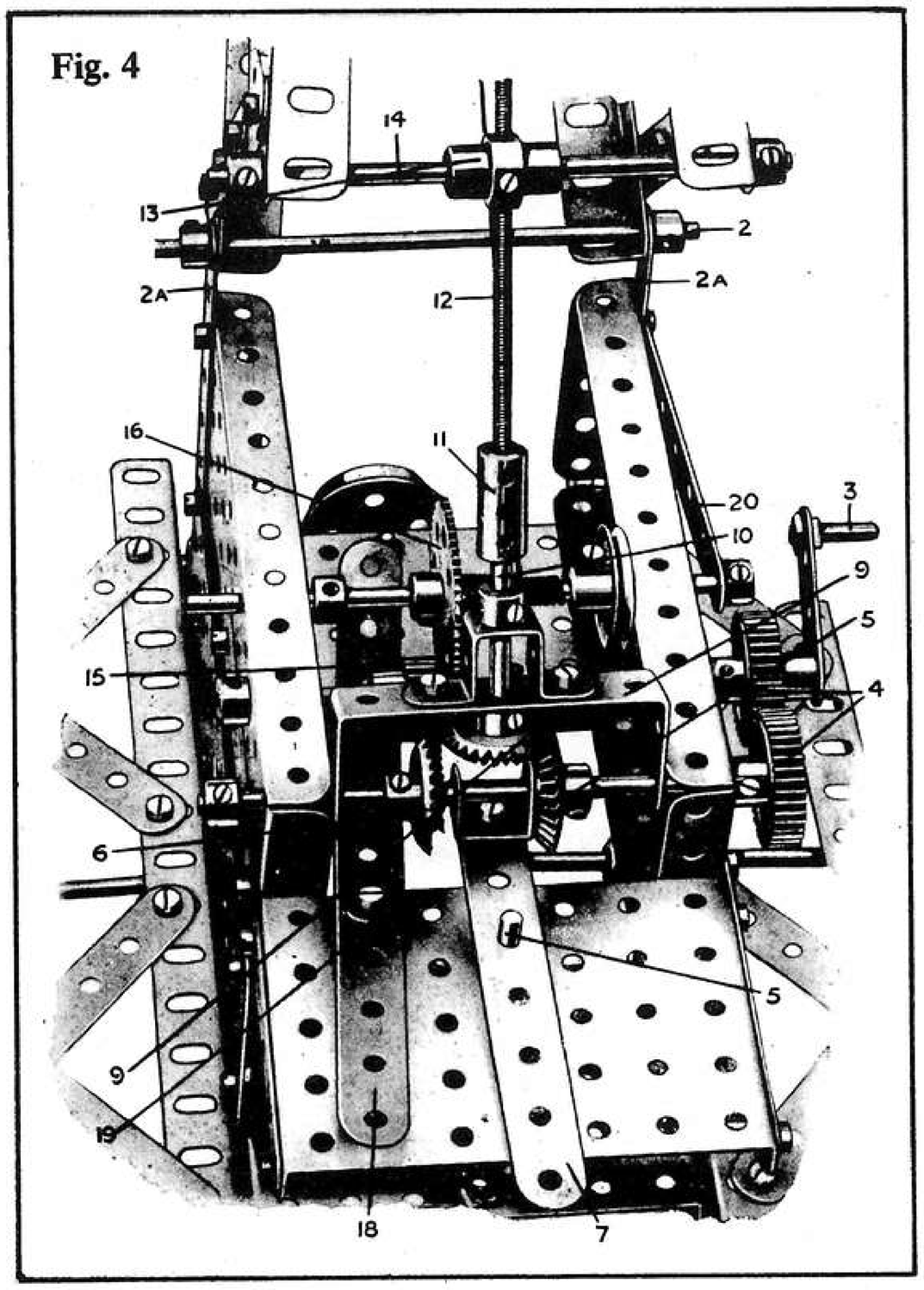


Fig. 4

Fig. 4, a view of the gearbox of the Meccano Revolving Crane, as seen from the rear, showing the luffing mechanism with reversing gear, etc. This, and all the illustrations in this feature, are reproduced directly from the original Super Model Leaflet No. 18.

←

Wheel 9. Rod 5a is arranged to slide longitudinally in its bearings and is controlled in this movement by Strip 7. The latter is pivotted on a Threaded Pin 5 (fig. 4), and to its inner end a Double Bracket is lock-nutted. This Double Bracket engages Rod 5a and is spaced between Bevels 5 and 6 by means of Washers.

Bevel Wheel 9 is carried on the end of the 2" Rod 10 that is connected by a Coupling 11 to a 5" Screwed Rod 12. Rod 10 is journalled in a 2½" x 1" Double Angle Strip carrying a Double Bent Strip and placed as shown in fig. 4, the whole arrangement being loosely pivotted on Rod 5a (see fig. 3). Screwed Rod 12 engages the transverse threaded hole in a Coupling 13 which is carried pivotally on two 2" Rods 14 so as to give a clear way for Screwed Rod 12. When Screwed Rod 12 is rotated, Coupling 13 travels up or down, according to the direction of rotation, and it carries the jib with it. When lever 7 is in the central position, all three Bevels 5, 6 and 9 are disengaged. A slight movement of the lever to one side or the other, however, brings one of the Bevels 5 and 6 into mesh with Bevel 9, thus actuating the luffing mechanism. Hence it will be seen that the jib may be raised or lowered without altering the direction of rotation of handle 3, and the load may be moved simultaneously, but in a different direction, to the jib.

The original Meccano electro-magnet which can be rebuilt with current parts.

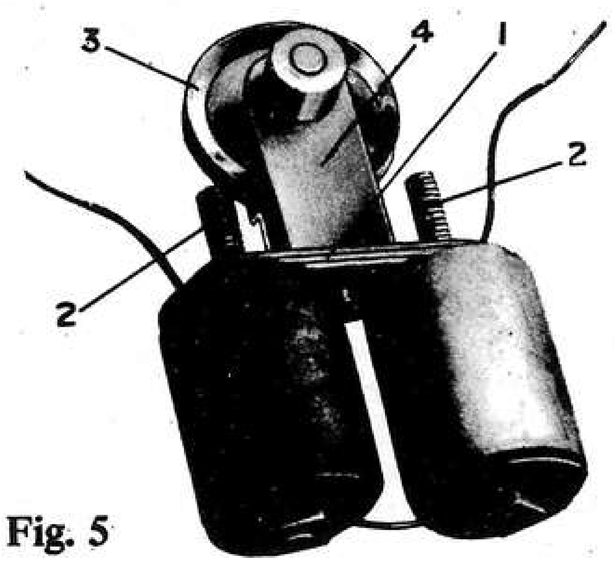


Fig. 5

HOISTING AND LOWERING GEAR

The Rod carrying handle 3 also carries a ½" Pinion 15 which meshes with a 57-teeth Gear Wheel 16, round the shaft of which is wound a length of Cord 17 (fig. 3) by means of which the load is raised or lowered. The shaft is caused to slide in its bearings, and so engage Gear 16 with Pinion 15, by means of a 3½" Strip 18 (fig. 4) pivotted at 19 on a Bolt lock-nutted to the Flanged Plate. The other end of Strip 18 is bent up to engage between the boss of Gear Wheel 16 and a Collar also carried on the Rod. A "spring" formed by slightly bending a 3½" Strip 20, is bolted to the side of the frame and this automatically releases the winding spindle from engagement with Pinion 15 when lever 18 is released.

A moveable hoisting pulley block illustrated in fig. 1, is constructed from two 2½" Strips placed one on each side of a 1" Pulley carried on a 1" Axle Rod. The Strips are connected together at each end, but are spaced by means of Washers so that the Pulley remains free to revolve on its Rod. A length of Cord is fed over one of the Pulleys in the jib head then around the sheave of the moveable pulley block over a second Pulley in the jib head, and then back to the movable pulley block where it is secured to the 2½" Strips. The other end of the hoisting Cord is secured to the Rod carrying Gear Wheels 16.

ADDITIONAL NOTES

Braking gear for the winding drum is not clearly described in the original Super Model Leaflet, but presumably the 1" Pulley on the winding shaft bears against the Flanged Plate when lever 18 is released. This crude system may be improved by fitting a Tyre to the Pulley. If the boss of the Pulley is fitted with a Grub Screw and reversed, the Pulley face will then make a better end-cheek for the winding drum in conjunction with the face of the 57-teeth Gear Wheel, to which the winding cord may be attached.

The original Leaflet No. 18 also included rather lengthy instructions for fitting an electro-magnet hoist and switch gear to operate it, but only one illustration, i.e. of the magnet block, appeared in the original leaflet. This is reproduced here for the sake of completeness, but the parts required are now long obsolete. However, modern Meccano Electrical Coils and Cores may be used as substitutes.

PARTS REQUIRED

9- 2	2-15	1-27a	1- 57
17- 3	2-15a	3-30	14- 59
2- 4	4-16	2-31	1- 62
10- 5	4-17	2-35	1- 63
2- 6	1-18a	83-37	1- 63a
2- 6a	6-20	18-38	1- 80
6- 8	1-22	1-45	2-100
2- 9	1-22a	1-46	1-111
1-11	1-23	2-52	2-115
4-12	1-26	4-53	

The Original Steam Engine

BERT LOVE discusses a collectors dream in this instalment of COLLECTORS' CORNER

*

ONE OF the very rarest of major Meccano historical items is the first-ever Meccano Steam Engine of 1914 vintage, and it is to this 'collectors' dream' that I devote my space this issue. Before doing so, however, I wish to express my sincere thanks to Jim Gamble, of Nottingham, for kindly loaning the old engine illustrated here from his magnificent MECCANO COLLECTION, located at his home in the village of Kinoulton, Nottinghamshire. When Jim recently discovered this priceless relic it was devoid of its spirit burner and whistle, but it is the authentic 1914 version and still carries the Meccano Ltd. transfer on its heavy black die-cast alloy base. This can be seen clearly at A in Fig. 3.

In the previous edition of MMQ, I commented on the similarity of the Meccano Flywheel (obsolete Part No. 132) with that of the early steam engine flywheel and readers can see from Fig. 1 how close the resemblance is. This was a sturdy toy and very similar to Märklin vertical steam engines of the 1920's which were on sale in Gamages of London for something around 12 shillings and sixpence. Figs. 1 and 3 show that the steam motion employed a fixed cylinder with an eccentrically-driven slide valve to give a double action and the port holes on the eccentric piston can be clearly seen in Fig.2. Jim's sample has been →

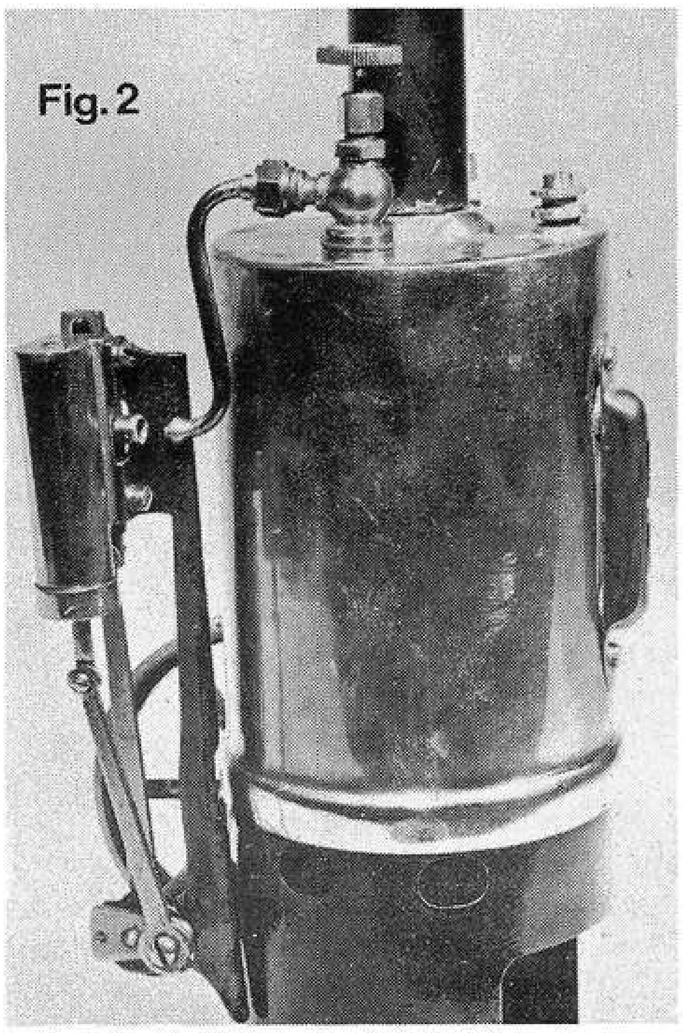
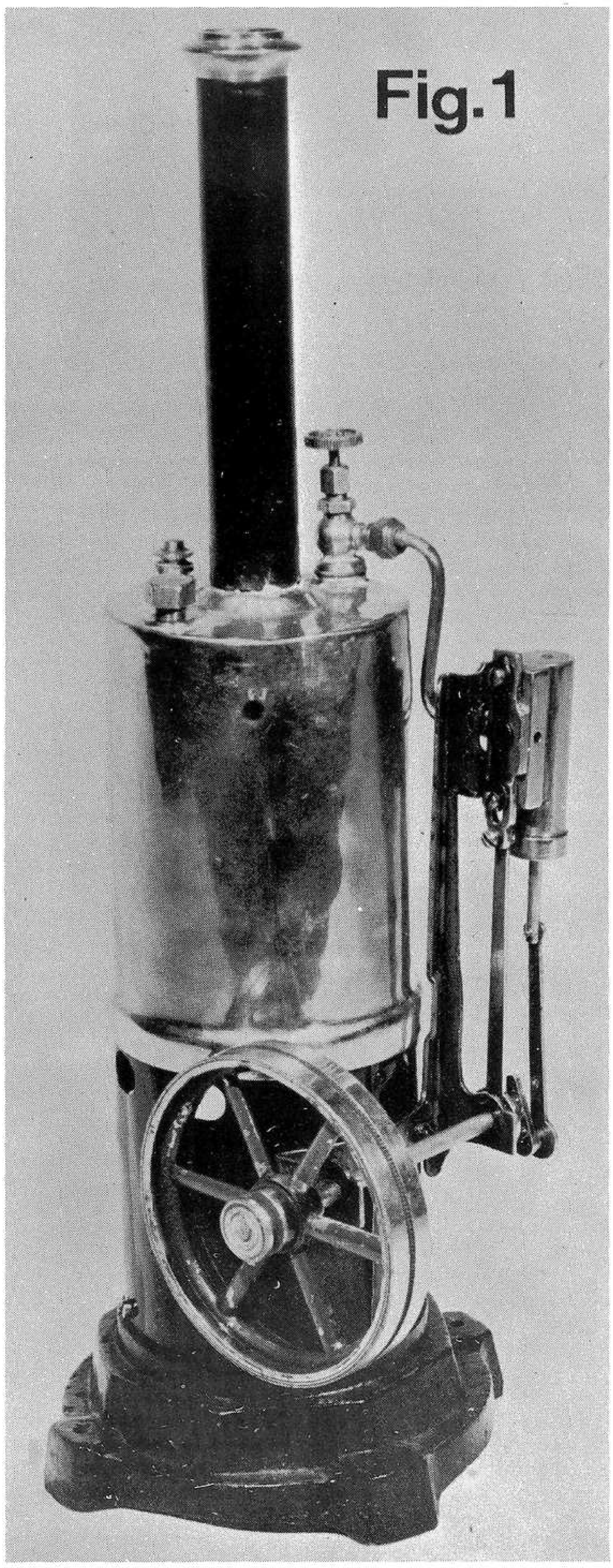
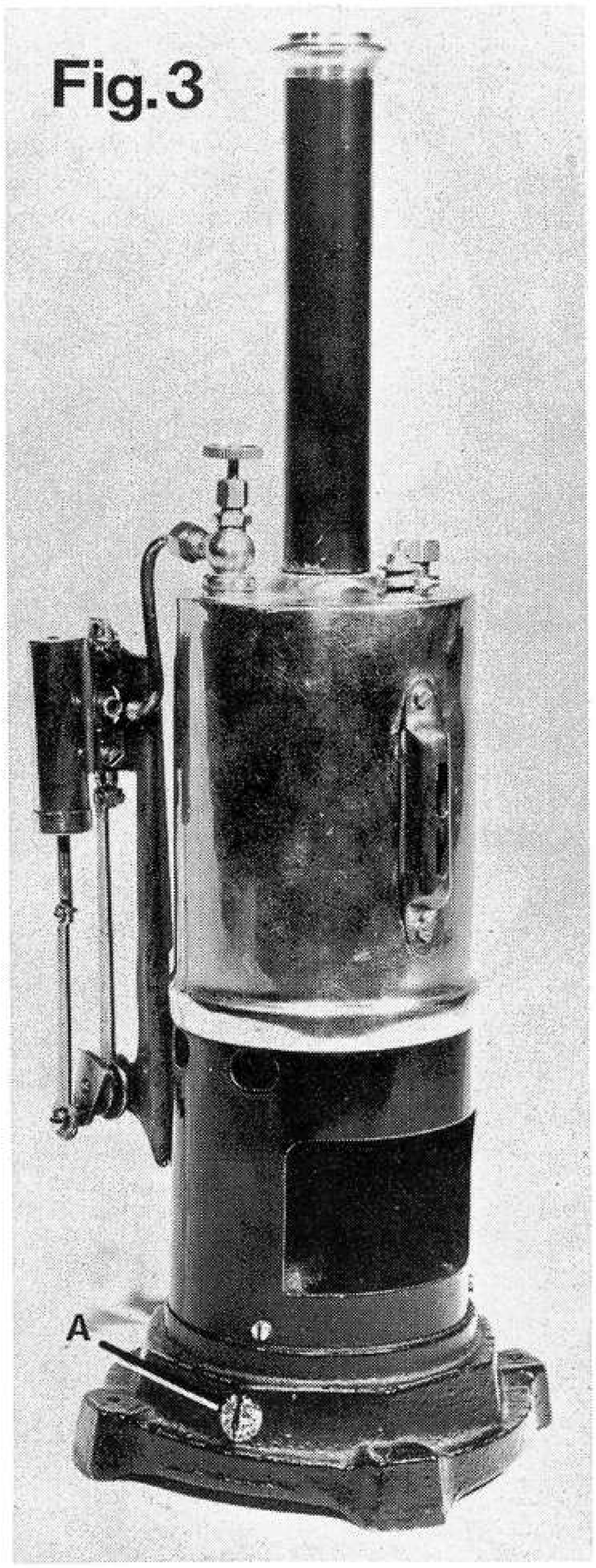


Fig. 1, right, shows a general view of the first-ever Meccano Steam Engine, believed to be of 1914 vintage. A very rare item, indeed, the Engine illustrated was kindly loaned to the author by Mr. Jim Gamble of Kinoulton, Notts. Fig.2, left, shows a close-up view of the cylinder and valve gear. Note the port holes on the eccentric piston.





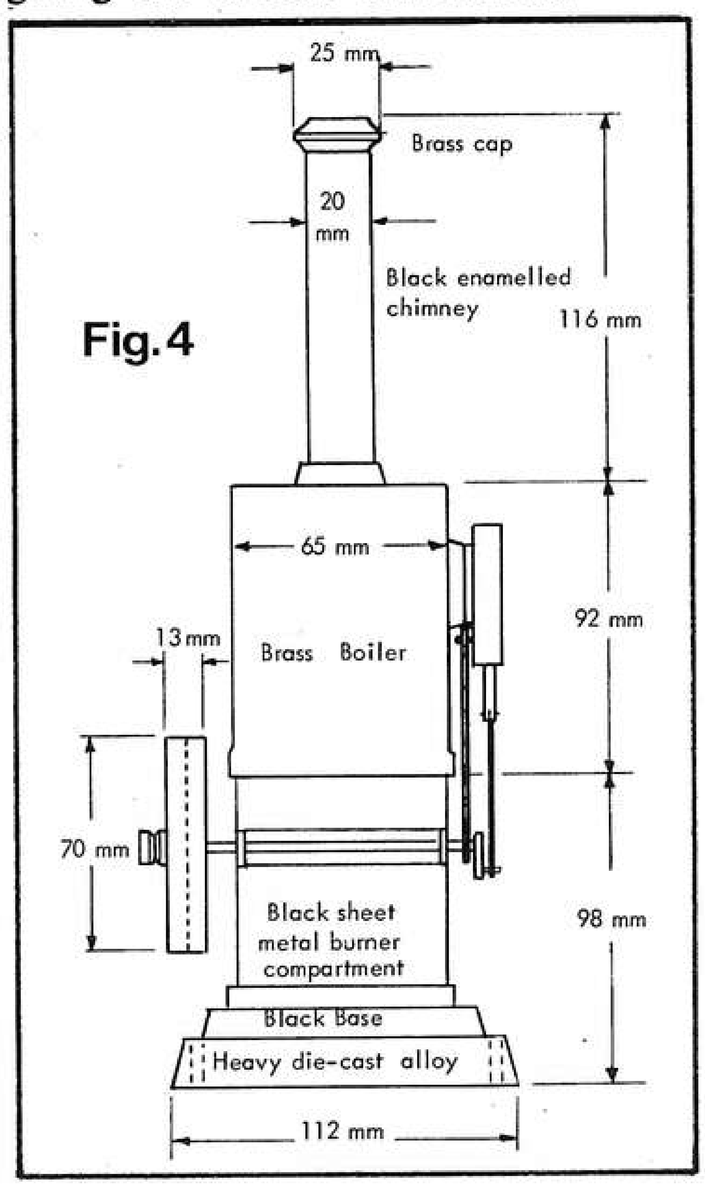
COLLECTORS' CORNER

Continued from previous Page

tried under steam and runs well, but it does not have the power that one might expect from its general appearance and design. By comparison with the later 1928 Meccano Steam Engine, with horizontal base plate and built-in gearbox, the older engine is no competitor. Generally speaking, the vertical Meccano Steam Engine was on sale in the late 'teens/early 'twenties, but the popularity of the newly-introduced Meccano Electric Motors spread so rapidly that "smelly things" like steam engines were often banned from domestic premises by anxious parents convinced that the boilers would inevitably "blow up"! However, the revival of steam via the newly-designed Meccano Steam Engine of 1928 remained until production stopped before World War 2.

So that the illustrations can take up the limited space available, I am keeping the text quite brief, but I would draw readers' attention to Fig. 4 which gives the overall dimensions of the engine. Although this drawing is scaled in its general presentation, it is not intended as a working drawing. It should, however, help enthusiasts to distinguish the real thing from similar, but cheaper, steam engines of around the same period. If any other enthusiast has such an engine then he is holding a pretty rare bird.

Fig.3, far left, shows another different general view of the original 1914-vintage Meccano Steam Engine. Note the small circular Meccano transfer at A which establishes the authenticity of the unit illustrated. Fig.4, below, is a diagram by the author giving the overall dimensions.



MECCANO CLUB ROUNDUP

All Meccano Clubs are invited to submit reports for these pages. Reports should be approximately 350 words long, and should reach us by the end of the second month before month of publication.

HENLEY SOCIETY OF JUNIOR MECCANO ENGINEERS

Although no separate reports from the Henley Society of Junior Meccano Engineers have appeared in recent editions of the MMQ, we are pleased to say that this is not due to the disappearance of the Club!

During the past summer, in addition to ordinary meetings, our members have enjoyed coach trips to the Holy Trinity M.C. meeting at Hildenborough, and to the Transport Day at Sion Park in London. At this latter event, some members took the opportunity of a brisk walk down the road to visit the preserved and restored pumping engines at Kew Bridge. The magnificent spectacle of a 19th Century behemoth of steam in full puff so impressed the visitors that they strongly suggested a Club visit to the site at a future date.

Back at Sion Park, amidst an atmosphere of road and rail nostalgia, the models displayed by the members were under close inspection by the public. Chris Reeve had brought an immaculate Aircraft built with parts from the long-obsolete Meccano Aircraft Constructor Outfits. This nicely complemented his Father's display of vintage Hornby Trains and Meccano Aircraft. Apart from some excellent models shown by some members of our associated adult Club, our own members flew the Meccano flag in no uncertain terms, and due to the crowd that gathered around the Exhibition tables, one might be forgiven for suspecting that someone was selling 'K'-Type Oilcans for 10p a dozen.

Perhaps thatmost spectacular model at the display was Ian Henwood's Lorry-mounted Crane. As Sion Park was an outdoor exhibition, Ian took advantage of the "high" ceiling", and erected this model to an enormous height; whilst at the more recent Henley Meccano Exhibition, the Crane grew even higher, nearly reaching the top of Henley Town Hall. On the Friday afternoon of the exhibition, Ian took the Crane to the studios of Southern Television, and appeared with his model on the 'Day by Day' programme.

As this is written, we are one week away from a return visit to nearby Park Place Residential School where we will be mounting an exhibition of working models. We shall also have at least one more meeting before Christmas, when we shall be able to close the book on a very eventful year.

Mike Nicholls.

NATAL MECCANO GUILD

On 27th July, four Meccano enthusiasts met in Durban and agreed to form the "Natal Meccano Guild".

The immediate goals set were to build-up the membership, stage an exhibition in Durham as soon as possible and to participate in the forthcoming Transvaal Meccano Guild 'Annual Guild Exhibition' in Johannesburg.

Discussion then turned to four mechanisms brought along by the author; a Spur Gear Differential, a Slipping

Clutch, a compact Gearbox and a Ball Bearing Turntable based on the Turntable featured in Bert Love's Meccano Constructor's Guide, but using 5½" Circular Girders and 4" Circular Plates instead of 7½" Circular Strips and 6" Circular Plates. Drive was by a Gear Ring and a ½" Pinion.

Bill Rudings' Lorry-mounted Drill was next to be examined. This is an advanced model with a particularly successful truck which features WRI 4" tyres mounted on Boiler Ends, and a novel drill bit made from seventy-five 1½" Strips fixed at one end to a central Threaded Rod and fanned out to form a very realistic auger. Pat Budd's Motor Chassis and Derek Spencer's No.10 Set Bus are presently under construction, and we hope to see them at the next meeting in September.

Ed. Hodson

(Anybody interested in the Natal Meccano Guild should contact Ed. Hodson at P.O. Box 5, Maidstone, Natal, South Africa. Tel: Tongaat 100)

SOCIETY OF ADVANCED MECCANO CONSTRUCTORS

Despite summer being the "closed" season for Meccano modelling, members of the S.A.M.C. have been very active in support of the "Meccano 75" campaign.

Early in the year, at the request of Meccano's Exhibitions Department, designs for a new range of No. 10 Set Display models were built by our members, and of the eight models required, some six of them were built before the middle of the year. These models have been on show in major department stores throughout the U.K. and have drawn vast crowds to the shopping centres. The major Meccano shows have also had their support, with Jim Gamble providing a stage full of historic Meccano items at the Henley-on-Thames Meccano Exhibition.

Overseas Associate Members have also rallied round, Dr. ("Pepe") Ferretti and Dr. Jorge Catella of the Argentine, Bill Inglis of Australia and Peter Matthews of S.A. providing first-rate Meccano material for articles in the companion magazine, Meccano Engineer. Bill Kingsley of Stouffville, Ontario, put on a one-man show in his own town and this was well written-up and illustrated by local press. Unfortunately they got the name of our famous hobby wrong and wrote it up under the title "MECHANO"!!

Support material for the M.M.Q., throughout the year has come from the Hon. Sec. in his Collector's Corner articles and the "Past Masters" series which draws on his stock of early literature and acquaintance with the old Supermodels. Additional activities have been the provision of demonstration models for Meccano dealers' shop windows in the Midlands and these have proved a great success. It has been a very busy and strenuous year in supporting the Exhibitions Department at Liverpool but showing the flag and keeping Meccano to the fore is always a stimulating effort for the genuine enthusiast.

Despite the work involved, members have still produced yet more excellent models for their own S.A.M.C. meetings in Hall Green during March and October, and a number of these are undoubtedly destined for future publication.

B.N. Love

(Bert has given me invaluable help and support during the life of MMQ and I would like to take this last opportunity of personally thanking him most sincerely for everything he has done – Ed.)

SOLENT MECCANO CLUB

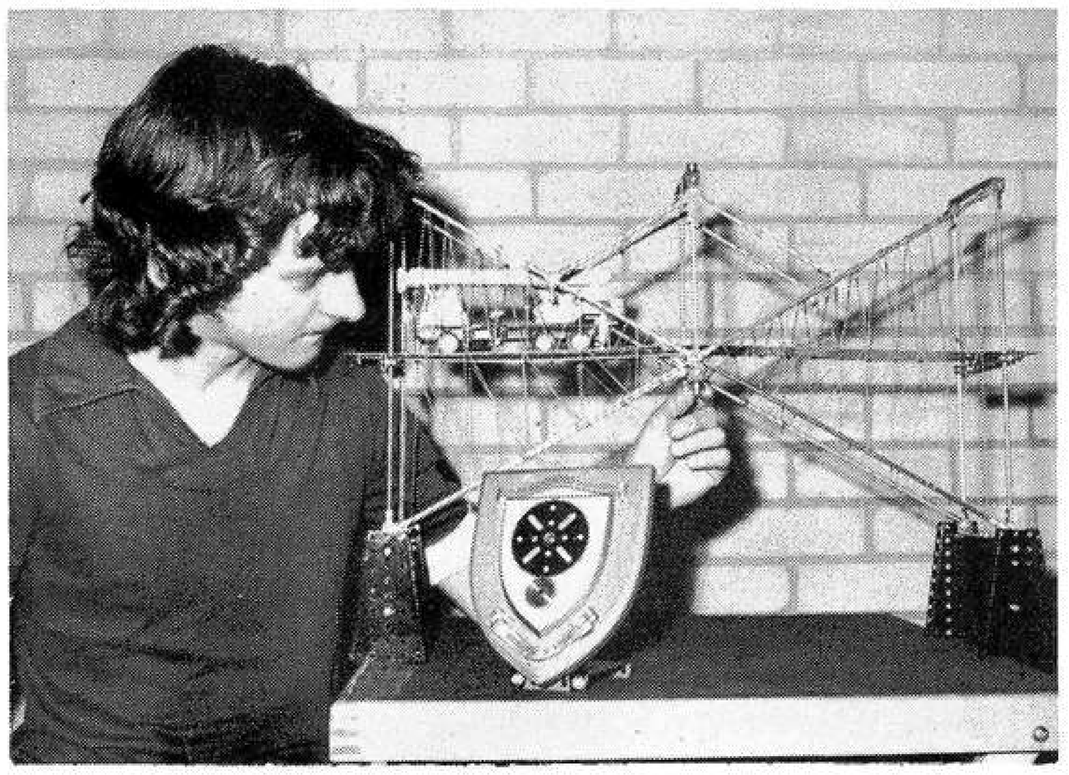
The Solent Meccano Club held its first public exhibition at the Netley Marsh Steam Engine Rally near Southampton on 24th and 25th July.

The number of models on display was remarkable considering the size of the Club – less than 12 members. Tony Rednall showed his Fork Lift, and also a splendid freelance Bulldozer which performed very realistically using remote-control. Centrepiece of the display was a superb Dockside Crane, built by Eddie Marshall which boasted no less than 7 motors! Eddie would not reveal the secret of how to run three motors remotely in the superstructure by passing only three strands of wire up through the roller bearings! An Articulated American Fire Engine based on a die-cast model and measuring almost 4' in length, was shown by Stephen and Robert Hall. Among other models, they also showed a freelance Truck with Multikit cab and an 'Emmett' – a collection of gears, pulleys and fans to attract the public eye.

Brian Williams kept to the spirit of the show with models of a Single Cylinder Burrell Agricultural Engine and a Foster Class LR Showmans Road Locomotive. Both models were as near to scale as possible, and featured many details including differential valve motion, brake and 2-speed gears. Eric Dormer and his son Mike presented a Meccanograph; a novel feature was the use of two 6-speed Motors, one driving the turntable and the other a series of gears and eccentrics to control the pen arm. In this way it was very easy to adjust the relative motion by changing the ratios on each Motor.

A Baltic Tank Locomotive from SML 15 was also present, but in updated form. Constructed by Peter Salsbury in current colours, it worked tirelessly throughout the show, as indeed did all the other models, from car batteries removed from Club members' private cars.

Peter Salsbury.



Right, Ian Henwood with the Suspension Bridge that won him the "Meccano Engineer" Trophy in the H.S.J.M.E's recent 'Build a Bridge' competition.

(Anybody interested in the Solent Meccano Club should contact Brian Williams at 7, Thorndike Road, Maybush, Southampton. Tel: Southampton 783683.)

SOUTHERN CALIFORNIA MECCANO CLUB

The June meeting of the Club was a tremendous success in terms of member attendance, models on display and items of interest. Mrs. Lock, our gracious hostess, kept us all supplied with good things to eat and drink.

Mr. Douglas A. Lock was elected as Club President for the coming year, and Clyde Suttle was elected as Secretary.

After introducing themselves, the members and juniors demonstrated and talked about their models. Douglas Lock demonstrated a neat remote-controlled Mobile Crane. Jack Taylor's Tower Crane – somewhat reduced in height and with a new pick-up grab device – drew considerable interest with its canned goods "stacking-ability". A 1928 SML High-speed Ship's Coaler by Clyde Suttle was used extensively to pick up and transfer pinto beans. Clyde Easterby exhibited some older sets and models.

Our next meeting is scheduled for 28th September, at the residence of Clyde Suttle.

Clyde Suttle.

(Any reader interested in the Southern California Meccano Club should contact the Secretary, Clyde T. Suttle, at 6062 Cerulean Avenue, Garden Grove, California 92645. Tel: 714-892 0602).

SOUTH EAST LONDON MECCANO CLUB

The response to my announcement in the January issue was a bit slow at first, but soon picked up and I set the date of the first meeting for 24th July at my home.

Geoff Davison showed us a Tower Crane built from instructions in the Crane Multikit, which he has improved by using 12½" instead of 9½" Braced Girders. Adrian Ashford brought along a half-finished model of a 4-6-0 Steam Locomotive. Powered by a Motor-with-Gearbox which operates all the complicated linkages, it will weigh in excess of 19lbs, and will therefore be a stationary model, the wheels just clearing the rails when completed.

Peter Clay showed a very unusual model in the shape of a Lorry-mounted Excavator, both sections of the model being based on standard Meccano outfit models. The Lorry was powered by a Motor-with-Gearbox, whilst all the movements of the Excavator were powered by a Junior Power Drive Motor via a compact gearbox.

Stan Bedford brought along a model of a 0-4-0 Locomotive and tender and also a model of the Ship described in the April 1975 MMQ. The latter was built in an attempt to interest his grandson in the Meccano hobby! Stan's other grandson, Neil, showed a freelance model of a Steam Excavator built from a No.9 Set.

I, myself, showed a remote-controlled Centurion Tank which runs on plastic tracks. It is powered by two Motors-with-Gearbox, one driving each track, and controlled by two 4-way switches for two forward and reverse speeds.

Also present at the meeting were Ike Ascher and Steven Ripper, and it has been decided that the next meeting will be in October.

Christopher Warrell.

(Anybody interested in the South East London Meccano Club should contact Christopher Warrell at 41, Beechhill Road, Eltham, London SE9 1HJ.

STEVENAGE MECCANO CLUB

Terry Pope, one of our members who also runs his own Meccano Club in Wellingborough, brought his young enthusiasts along to a Hornby and Meccano exhibition that we mounted in Letchworth in May. Lacking large collections of parts, Terry's lads have become artists at improvisation, and we all hope that this talent is not lost as they become more affluent.

The SMC successfully split into two sections to put on two simultaneous displays in Stevenage on 12th June, one at Pin Green School and the other at Wellfield School, the former being looked after by Neil Alston and the latter by Dennis Higginson.

The 10th July is looked back on rather like D-Day, for that was when the SMC showed the flag for the Meccano hobby to about 10,000 Cub Scouts at Little Thetford, near Ely. Full details of this event appear elsewhere in this issue.

The fixture list for 1977 is already filling up, and our Secretary wishes to express his appreciation of the work done by SMC members and our friends from other clubs who help to make our many displays so successful.

New members who have joined our Club since the last report are Nicholas Goldfinch, Edward Willson, Andrew Coe, Martin Harrold and Tony Bishop, all from Stevenage.

We have a fire engine collector in our midst, namely Neville Alston. He has over 80 models in metal and plastic including, of course, the full Dinky Toy range. Readers who share this interest and would like to get in touch with Neville, or, indeed, anyone who wishes to learn more about the Club in general, should write to the Secretary, Dennis Higginson, at 7 Buckthorn Avenue, Stevenage, Herts.

Finally, since this may be our last chance, we wish fellow Meccano modellors worldwide a very happy Christmas.

Bernard Dunkley.

TRANSVAAL MECCANO GUILD

Our 23rd meeting was the first to be held in the capital city of Pretoria. On this historic occasion at the house of Jaap Kies, a new committee was elected, which accounts for my writing this report rather than Peter Matthews. The committee, under the continued Chairmanship of Peter, is fully occupied at organising our Annual Exhibition for the 5th and 6th of November, while model building throughout the Guild is at fever pitch to meet the deadline.

Bill Steele is the member specifically encumbered with the arrangements for this event, which will encompass both a local and national competition. The Cape Town Meccano Club, as well as the newly formed Natal Meccano Guild, are expected to be represented. Members of the Junior Meccano Guild, a country-wide correspondence club for young enthusiasts, will also have the opportunity to meet each other, and us, at the Exhibition, as well as to participate in a special competition.

For the 24th meeting we were back at our headquarters in Johannesburg, with members displaying a wide range of models or parts thereof in various stages of completion. Indications are that cranes, construction equipment, road vehicles and fairground models will all be well represented at the Exhibition, while the "live-steam" section should be an attraction all on its own. The largest single section may, however, very well prove to be that of railway models. Our next outing will be the dress rehearsal for the show.

We are further well pleased to have been able to make a contribution to the growing selection of replica obsolete parts being made available to the Meccanomen of the world. Paul Hatty deserves special mention in this connection.

Pierre Marais.

STEVENAGE M.C. AT ELY

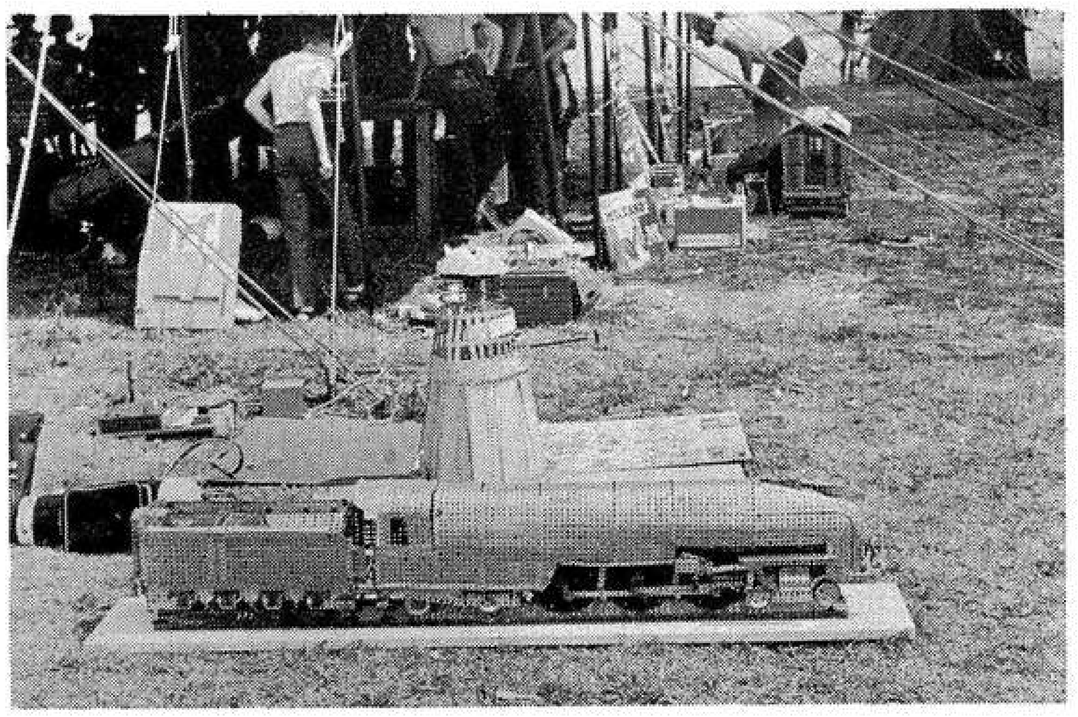
Neil Alston reports on the Stevenage Meccano Club's Exhibition at the Cub Scout 60th Anniversary Jubilee in Ely, Cambridgeshire, last July.

On Saturday 10th July, the Stevenage Meccano Club mounted an exhibition at a weekend camp for Cub Scouts. The camp was at Bremham Farm, Little Thetford, near Ely in Cambs., and was organised to celebrate the 60th anniversary of the founding of the Scout movement. Some 3,500 Cubs were under canvas and, on the Saturday, there were about 4,500 visitors, these being Cubs from local packs.

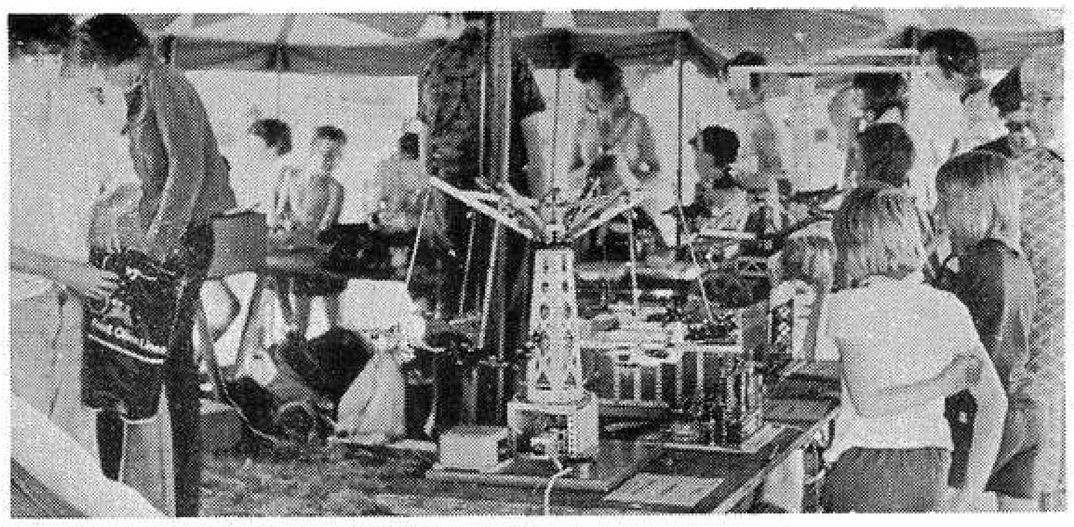
The SMC was allocated a large marquee which was duly filled with around 80 varied models and, thanks to the fine weather, they were able to set up a number of static models outside the marquee.

Models on show included a set of nine Ship models by Peter Neville of Stevenage who, on Saturday morning, was rushed into hospital for an appendix operation and thus was unfortunately unable to attend. The Ships were complemented by a model of Tower Bridge by Alec Webb of Letchworth, a Dalek by Peter Brown, a Locomotive by Peter Walton of Stevenage, a Gypsy Caravan by Neil Alston and a London Bus and Austin 7 by Michael Edwards. Although unable to attend, Brian Edwards sent over a fine selection of models. It would be impossible to say which models were the favourites, but it was evident from the comments during the day that they were all unaware that the Meccano system can be expanded to the degree that it can be.

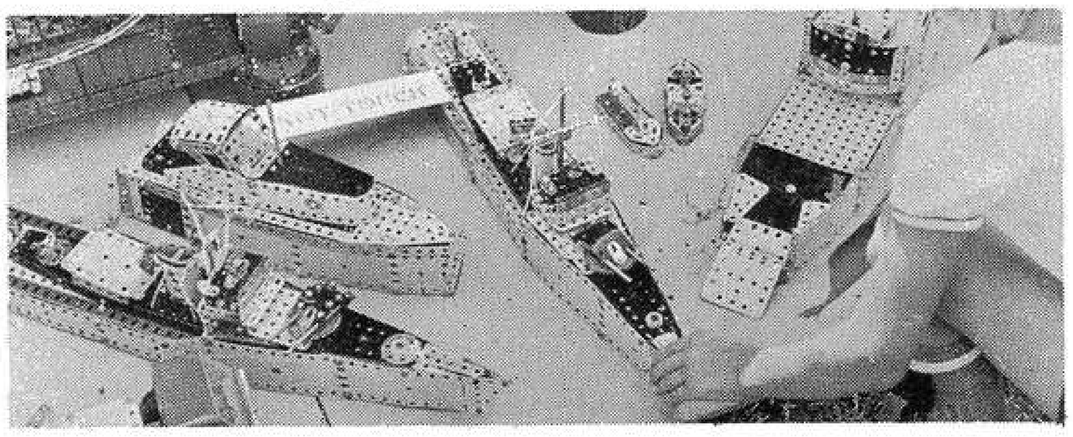
Perhaps the funniest comment of the day came from a Sergeant in the Royal Anglian Regiment who had some weapons on show which had also suffered at the hands of the inquisitive Cubs. He commented: "I'm glad that we left our Scorpion Tank at base, else we might have needed some Meccano to mend it." Good to know Meccano may come to the defence of the Country!



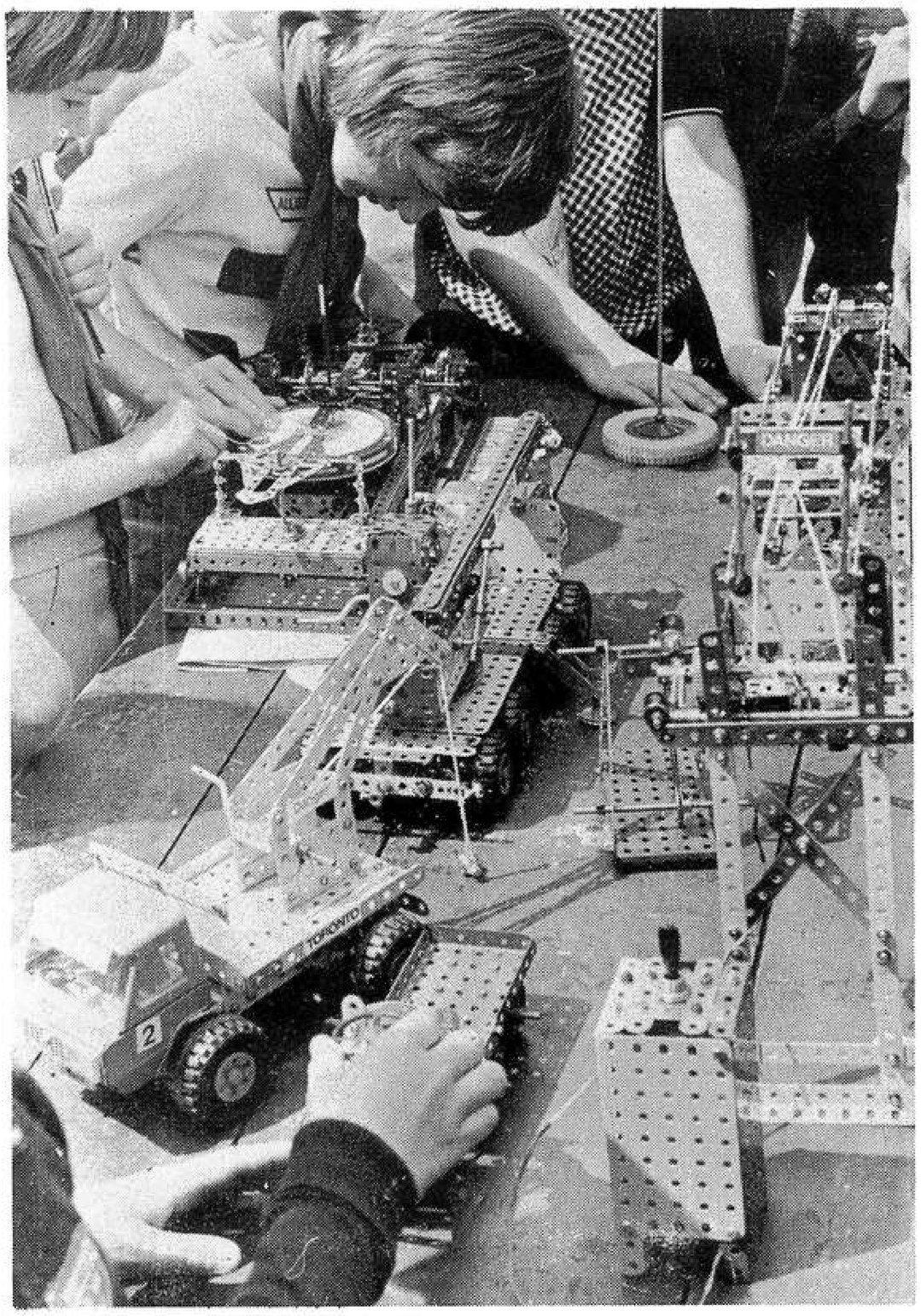
Above, outside the marquee, Peter Walton's No.10000 Locomotive and Peter Brown's Dalek. Below, a general view inside the marquee.



Below, some of the nine Ship models displayed by Peter Neville of Stevenage, Herts.



Below, just a few of the eighty models that the Stevenage Club displayed at Ely in July.



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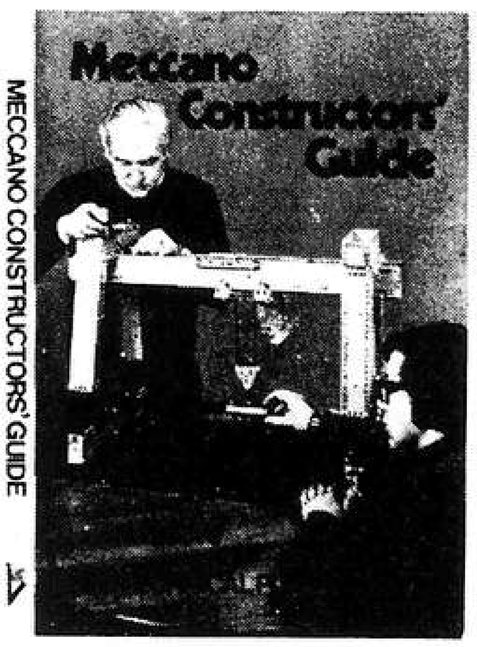

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Because of the ever-increasing number of displays mounted by Meccano Clubs and modellers throughout the U.K., and to avoid clashing with these displays, the organisers of the annual Henley Meccano Exhibition have already set the dates for next years' show. *The 6th. Annual Meccano Exhibition will therefore be held on Friday 2nd. and Saturday 3rd. September 1977* in the Town Hall, Henley-on-Thames, Oxon. We seriously suggest all interested parties make a note of these dates so as to avoid the danger of accepting another booking for the same weekend.

PUZZLE IT OUT

Answer to the brain teazer on Page 115 of this issue: part group 1 on squares 5,7,13,15; part group 2 on squares 1,4,12,19; part group 3 on squares 2,9,17,20; part group 4 on squares 3,10,11,18; part group 5 on squares 6,8,14,16.

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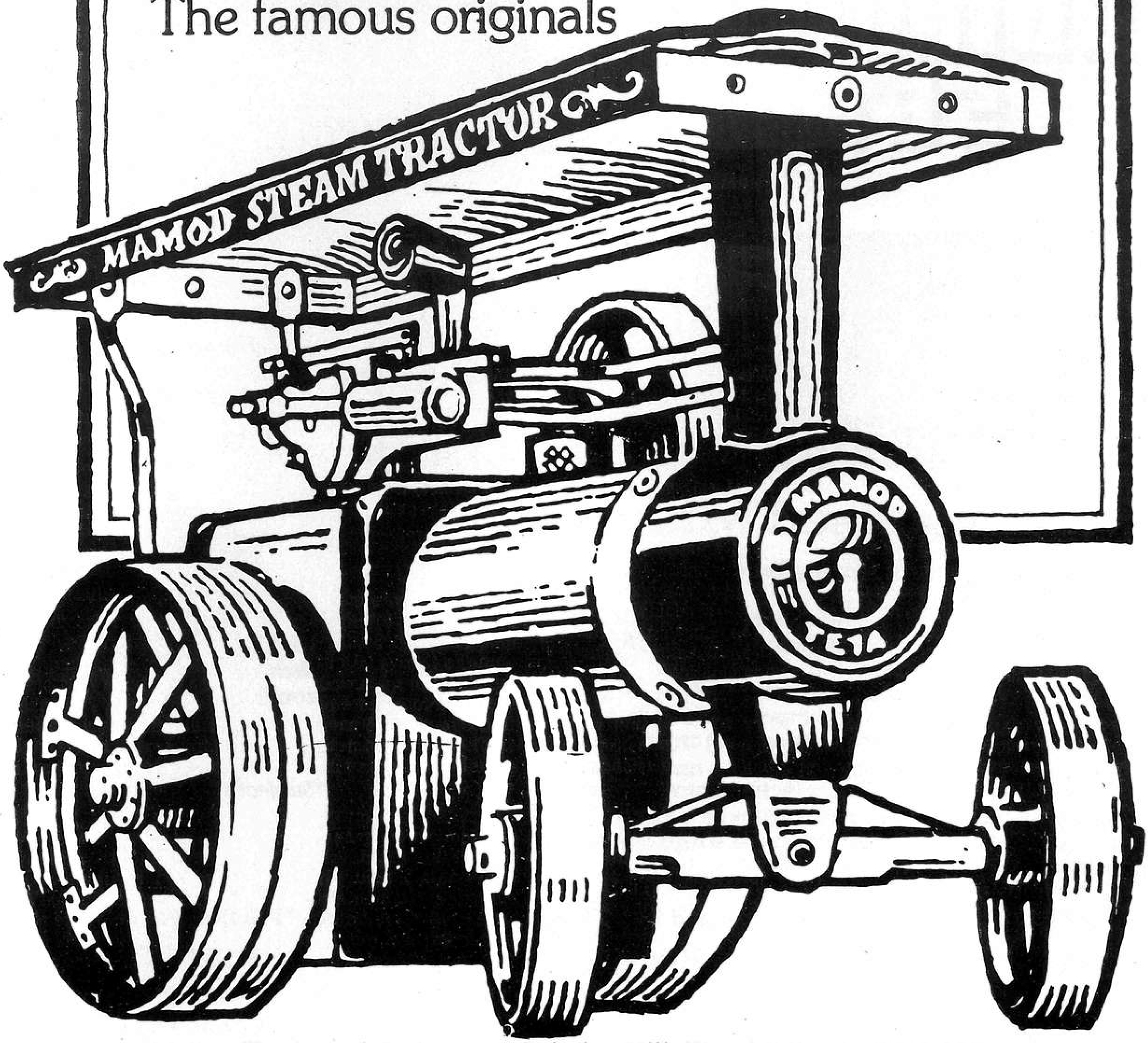

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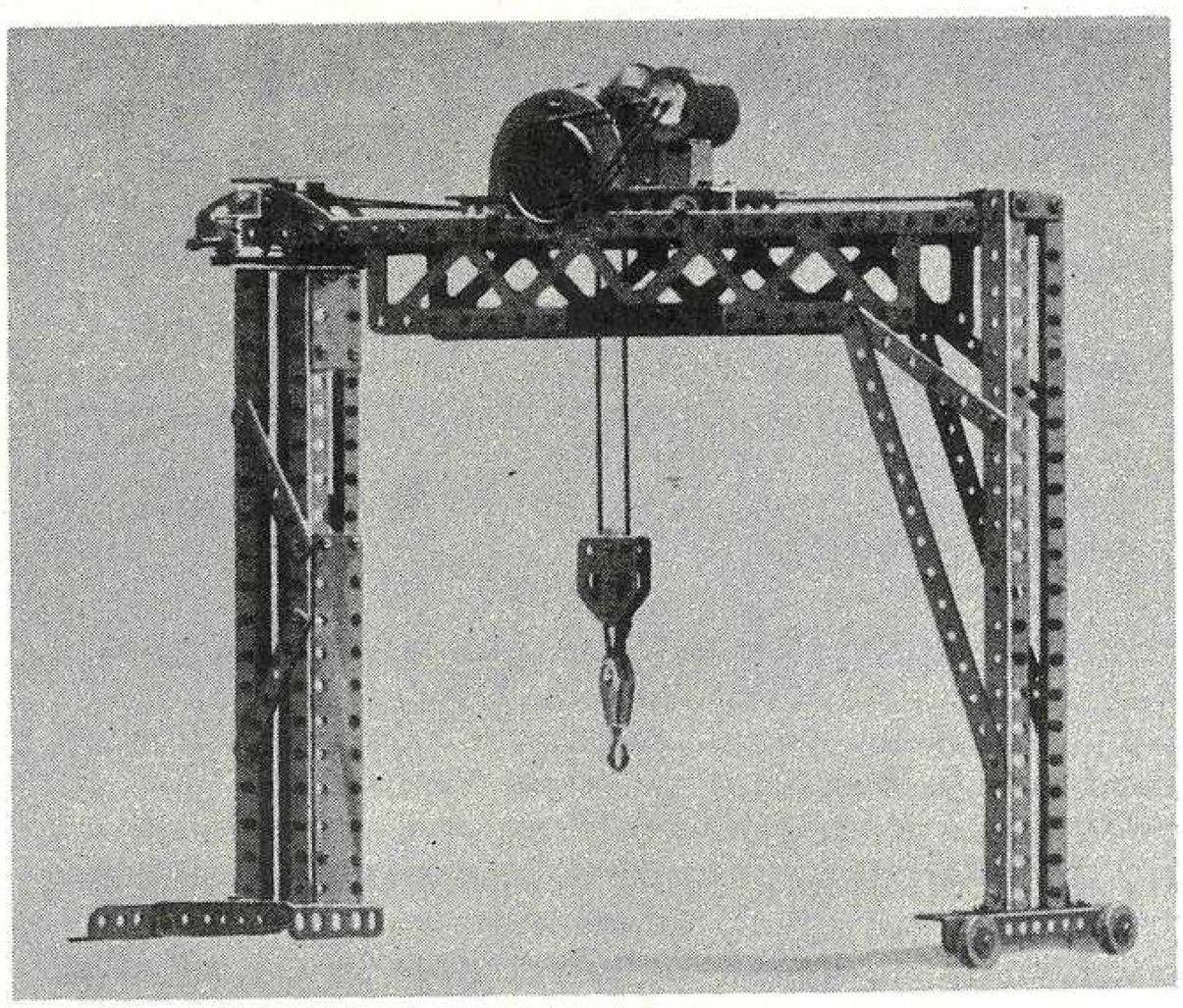

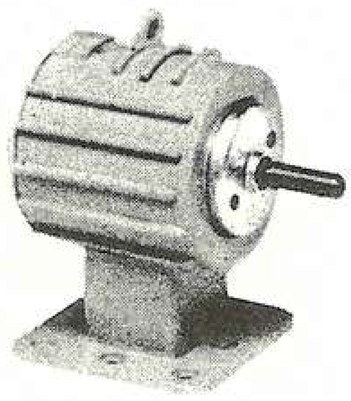

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